

# FARHAD FAROKHI

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## EXPERIENCE

9/2014– continuing position (confirmed/ tenured)	<b>Department of Electrical and Electronic Engineering</b> <ul style="list-style-type: none"><li>• Senior Lecturer</li><li>• Lecturer</li><li>• Research Fellow</li><li>• McKenzie Fellow</li><li>• Research Fellow</li></ul>	<b>The University of Melbourne</b> 9/2022–Present 4/2020–8/2022 6/2018–4/2020 6/2016–6/2018 9/2014–6/2016
6/2018–4/2020	<b>Data61</b> <ul style="list-style-type: none"><li>• Research Scientist</li></ul>	<b>The Commonwealth Scientific and Industrial Research Organisation (CSIRO)</b> 6/2018–4/2020
4/2010–9/2014	<b>Automatic Control Department</b> <ul style="list-style-type: none"><li>• Postdoctoral Researcher</li><li>• PhD Student and Teaching Assistant</li></ul>	<b>KTH Royal Institute of Technology</b> 3/2014–9/2014 4/2010–3/2014
5/2013–8/2013	<b>Department of Electrical Engineering and Computer Sciences</b> <ul style="list-style-type: none"><li>• Visiting Student Researcher</li></ul>	<b>The University of California at Berkeley</b> 5/2013–8/2013

## EDUCATION

2/2021–12/2021	<b>Graduate Certificate in University Teaching (GCUT)</b>	<b>The University of Melbourne</b>
4/2010–3/2014	<b>PhD in Automatic Control</b>	<b>KTH Royal Institute of Technology</b>
9/2008–2/2010	<b>MSc in Electrical Engineering (Control Engineering)</b>	<b>Sharif University of Technology</b>
9/2005–9/2008	<b>BSc in Electrical Engineering (Control Engineering)</b>	<b>Sharif University of Technology</b>

## GRANTS, AWARDS, AND HONORS

2022	<b>Best Paper Award (IEEE Transactions on Information Forensics and Security)</b>	<b>IEEE Signal Processing Society</b>
2021	<b>Engineering Special Recognition Award, EMI</b>	<b>The University of Melbourne</b>
2020	<b>Excellence Award for Early Career Research, FEIT</b>	<b>The University of Melbourne</b>
2016, 2018, 2021, 2022	<b>Research Contract</b>	<b>Defence Science and Technology Group (DSTG)</b>
2020	<b>Discovery Project</b>	<b>Australian Research Council (ARC)</b>
2019	<b>Elevated to Senior Member</b>	<b>IEEE</b>
2018, 2019	<b>Engineering and Technology Award, SCS, Data61</b>	<b>CSIRO</b>
2018, 2019	<b>Platforms for Open Data (PfOD)</b>	<b>Department of the Prime Minister and Cabinet</b>
2018, 2019	<b>National Energy Analytics Research (NEAR)</b>	<b>Department of the Environment and Energy</b>
2018	<b>Data Driven Cities &amp; Energy Challenge</b>	<b>CSIRO</b>
2017	<b>VESKI Victoria Fellowship</b>	<b>Victorian State Government</b>
2016	<b>McKenzie Fellowship</b>	<b>The University of Melbourne</b>
2015	<b>Early Career Researcher Grant</b>	<b>The University of Melbourne</b>
2015	<b>Outstanding reviewer</b>	<b>IEEE Transactions on Control of Network Systems</b>
2015	<b>Outreach Fund</b>	<b>IEEE Control System Society</b>
2014	<b>Finalist in PhD Award (1 of 4 graduates in Europe)</b>	<b>European Embedded Control Institute (EECI)</b>
2014	<b>Postdoctoral Scholarship at Stanford University (declined/prior commitment)</b>	<b>Wallenberg Foundation</b>
2013	<b>Travel grant to attend IEEE CDC</b>	<b>Sten och Lisa Velanders Forskningsfond</b>
2012	<b>Best presentation in Session</b>	<b>American Control Conference (ACC)</b>
2011	<b>Travel grant</b>	<b>EECI-HYCON2 Graduate School on Control</b>

## EDITED BOOKS

[E<sub>1</sub>] **F. Farokhi**, "Privacy of Dynamical Systems," *Springer*, Singapore, 2020.

## JOURNAL PAPERS

- [J<sub>50</sub>] **F. Farokhi**, "Maximal Information Leakage from Quantum Encoding of Classical Data," *Physical Review A*. In Press.
- [J<sub>49</sub>] G. Zafzouf, G. N. Nair, **F. Farokhi**, "Uniformly Bounded State Estimation over Multiple Access Channels," *IEEE Transactions on Automatic Control*, 68(12), pp. 7692–7707, 2023.
- [J<sub>48</sub>] **F. Farokhi**, A. S. Leong, M. Zamani, I. Shames, "Learning Safety Filters for Unknown Discrete-Time Linear Systems," *IEEE Control Systems Letters*, 7, pp. 1843–1848, 2023.
- [J<sub>47</sub>] **F. Farokhi**, "Distributionally-Robust Optimization with Noisy Data for Discrete Uncertainties Using Total Variation Distance," *IEEE Control Systems Letters*, 7, pp. 1494–1499, 2023.
- [J<sub>46</sub>] **F. Farokhi**, "Noiseless Privacy: Definition, Guarantees, and Applications," *IEEE Transactions on Big Data*, 9(1), pp. 51–62, 2023.
- [J<sub>45</sub>] N. U. Sheikh, H. J. Asghar, **F. Farokhi**, M. A. Kaafar, "Do Auto-regressive Models Protect Privacy? Inferring Fine-grained Energy Consumption from Aggregated Model Parameters," *IEEE Transactions on Services Computing*, 15(6), pp. 3198–3209, 2022.
- [J<sub>44</sub>] A. Saberi, **F. Farokhi**, G. Nair, "Zero-Error Feedback Capacity for Bounded Stabilization and Finite-State Additive Noise Channels," *IEEE Transaction on Information Theory*, 68(10), pp. 6335–6355, 2022.

- [J<sub>43</sub>] A. Saberi, **F. Farokhi**, G. Nair, "Bounded Estimation over Finite-State Channels: Relating Topological Entropy and Zero-Error Capacity," *IEEE Transaction on Automatic Control*, 67(8), pp. 4029–4044, 2022.
- [J<sub>42</sub>] A. Zafar, M. Cantoni, **F. Farokhi**, "Structured Preconditioning of Conjugate Gradients for Path-Graph Network Optimal Control Problems," *IEEE Transactions on Automatic Control*, 67(8), pp. 4115–4122, 2022.
- [J<sub>41</sub>] **F. Farokhi**, "Distributionally-Robust Machine Learning Using Locally Differentially-Private Data," *Optimization Letters*, 16, pp. 1167–1179, 2022.
- [J<sub>40</sub>] A. Lang, M. Cantoni, **F. Farokhi**, I. Shames, "Rigid-Profile Input Scheduling under Constrained Dynamics with Water Network Application," *IEEE Transactions on Control Systems Technology*, 29(6), pp. 2457–2472, 2021.
- [J<sub>39</sub>] **F. Farokhi**, "Privacy-Preserving Public Release of Datasets for Support Vector Machine Classification," *IEEE Transactions on Big Data*, 7(5), pp. 893–899, 2021.
- [J<sub>38</sub>] **F. Farokhi**, "Why Does Regularization Help with Mitigating Poisoning Attacks?," *Neural Processing Letters*, Neural Processing Letters, 53(4), 2933-2945, 2021.
- [J<sub>37</sub>] C. Murguia, I. Shames, **F. Farokhi**, D. Nesic, H. V. Poor, "On Privacy of Dynamical Systems: An Optimal Probabilistic Mapping Approach," *IEEE Transaction on Information Forensics and Security*, 16, pp. 2608–2620, 2021.
- [J<sub>36</sub>] **F. Farokhi**, "A Game-Theoretic Approach to Adversarial Linear Support Vector Classification," *IFAC Journal of Systems & Control*, 17:100163, 2021.
- [J<sub>35</sub>] B. Liu, M. Ding, S. Shaham, W. Rahayu, **F. Farokhi**, Z. Lin, "When Machine Learning Meets Privacy: A Survey and Outlook," *ACM Computing Survey*, 54(2), 31:1-36, 2021.
- [J<sub>34</sub>] **F. Farokhi**, N. Wu, D. Smith, M. A. Kaafar, "The Cost of Privacy in Asynchronous Differentially-Private Machine Learning," *IEEE Transactions on Information Forensics and Security*, 16, pp. 2118–2129, 2021.
- [J<sub>33</sub>] **F. Farokhi**, "Feedback Control Using a Strategic Sensor," *International Journal of Control*, 94(1), pp. 1-6, 2021.
- [J<sub>32</sub>] **F. Farokhi**, "Deconvoluting Kernel Density Estimation and Regression for Locally Differentially Private Data," *Scientific Reports*, 10:21361, 2020.
- [J<sub>31</sub>] **F. Farokhi**, I. Shames, K. H. Johansson, "Private Ride Sharing and Routing Using Semi-Homomorphic Encryption," *IET Cyber-Physical Systems: Theory & Applications*, 5(4), pp. 311–320, 2020.
- [J<sub>30</sub>] C. Murguia, **F. Farokhi**, I. Shames, "Secure and Private Implementation of Dynamic Controllers Using Semi-Homomorphic Encryption," *IEEE Transactions on Automatic Control*, 65(9), pp. 3950–3957, 2020.
- [J<sub>29</sub>] N. Ding, **F. Farokhi**, "Developing Non-Stochastic Privacy-Preserving Policies Using Agglomerative Clustering," *IEEE Transaction on Information Forensics and Security*, 15, pp. 3911–3923, 2020.
- [J<sub>28</sub>] K. Wei, J. Li, M. Ding, C. Ma, H. H. Yang, **F. Farokhi**, S. Jin, T. Q. S. Quek, H. V. Poor "Federated Learning with Differential Privacy: Algorithms and Performance Analysis," *IEEE Transactions on Information Forensics and Security*, 15, pp. 3454–3469, 2020.
- [J<sub>27</sub>] **F. Farokhi**, "Privacy-Preserving Constrained Quadratic Optimization with Fisher Information," *IEEE Signal Processing Letters*, 27(1), pp. 545–549, 2020.
- [J<sub>26</sub>] **F. Farokhi**, "Non-Stochastic Hypothesis Testing for Privacy," *IET Information Security*, 14(6), pp. 754–763, 2020.
- [J<sub>25</sub>] **F. Farokhi**, "Review of Results on Smart-Meter Privacy by Data Manipulation, Demand Shaping, and Load Scheduling," *IET Smart Grid*, 3(5), pp. 605–613, 2020.
- [J<sub>24</sub>] J. Tran, **F. Farokhi**, M. Cantoni, I. Shames, "Implementing Homomorphic Encryption Based Secure Feedback Control," *Control Engineering Practice*, 97, pp. 1–12, 2020.
- [J<sub>23</sub>] **F. Farokhi**, I. Shames, M. Cantoni, "Optimal Contract Design for Effort-Averse Sensors," *International Journal of Control*, 93(3), pp. 738–745, 2020.
- [J<sub>22</sub>] M. Cantoni, **F. Farokhi**, E. C. Kerrigan, I. Shames, "Structured Computation of Optimal Control for Constrained Cascade Systems," *International Journal of Control*, 93(1), pp. 30–39, 2020.
- [J<sub>21</sub>] **F. Farokhi**, "Development and Analysis of Deterministic Privacy-Preserving Policies Using Non-Stochastic Information Theory," *IEEE Transactions on Information Forensics & Security*, 14(10), pp. 2567–2576, 2019.
- [J<sub>20</sub>] **F. Farokhi**, M. Egerstedt "Optimal Stochastic Evasive Maneuvers Using the Schrödinger's Equation," *IEEE Control Systems Letters*, 3(3), pp. 517–522, 2019.
- [J<sub>19</sub>] **F. Farokhi**, H. Sandberg, "Ensuring Privacy with Constrained Additive Noise by Minimizing Fisher Information," *Automatica*, 99, pp. 275–288, 2019.
- [J<sub>18</sub>] **F. Farokhi**, H. Sandberg, "Fisher Information as a Measure of Privacy: Preserving Privacy of Households with Smart Meters Using Batteries," *IEEE Transactions on Smart Grid*, 9(5), pp. 4726–4734, 2018.
- [J<sub>17</sub>] A. Keimer, N. Laurent-Broudy, **F. Farokhi**, H. Signargout, V. Cvetkovic, A. M. Bayen, K. H. Johansson, "Integration of Information Patterns in the Modeling and Design of Mobility Management Services," *Proceedings of the IEEE*, 106(4), pp. 554–576, 2018.
- [J<sub>16</sub>] M. Schulze Darup, A. Redder, I. Shames, **F. Farokhi**, D. E. Quevedo, "Towards Encrypted MPC for Linear Constrained Systems," *IEEE Control Systems Letters*, 2(2), pp. 195–200, 2018.
- [J<sub>15</sub>] **F. Farokhi**, I. Shames, N. Batterham, "Secure and Private Control Using Semi-Homomorphic Encryption," *Control Engineering Practice*, 67, pp. 13–20, 2017.
- [J<sub>14</sub>] I. Shames, **F. Farokhi**, T. H. Summers, "Security Analysis of Cyber-Physical Systems Using  $\mathcal{H}_2$  Norm," *IET Control Theory & Applications*, 11(11), pp. 1749–1755, 2017.
- [J<sub>13</sub>] G. Bottegal, **F. Farokhi**, I. Shames, "Preserving Privacy of Finite Impulse Response Systems," *IEEE Control Systems Letters*, 1(1), pp. 128–133, 2017.
- [J<sub>12</sub>] T. Tanaka, **F. Farokhi**, C. Langbort, "Faithful Implementations of Distributed Algorithms and Control Laws," *IEEE Transactions on Control of Network Systems*, 4(2), pp. 191–201, 2017.
- [J<sub>11</sub>] **F. Farokhi**, A. M. H. Teixeira, C. Langbort, "Estimation with Strategic Sensors," *IEEE Transactions on Automatic Control*, 62(2), pp. 724–739, 2017.
- [J<sub>10</sub>] **F. Farokhi**, I. Shames, M. G. Rabbat, M. Johansson, "On Reconstructability of Quadratic Utility Functions from the Iterations in Gradient Methods," *Automatica*, 66, pp. 254–261, 2016.

- [J<sub>9</sub>] **F. Farokhi**, K. H. Johansson, "A Piecewise-Constant Congestion Taxing Policy for Repeated Routing Games," *Transportation Research Part B: Methodological*, 78, pp. 123–143, 2015.
- [J<sub>8</sub>] **F. Farokhi**, I. Shames, M. Cantoni, "Promoting Truthful Behavior in Participatory-Sensing Mechanisms," *IEEE Signal Processing Letters*, 22(10), pp. 1538–1542, 2015.
- [J<sub>7</sub>] **F. Farokhi**, K. H. Johansson, "A Study of Truck Platooning Incentives Using a Congestion Games," *IEEE Transactions on Intelligent Transportation Systems*, 16(2), pp. 581–595, 2015.
- [J<sub>6</sub>] **F. Farokhi**, K. H. Johansson, "Optimal Control Design under Limited Model Information for Discrete-Time Linear Systems with Stochastically-Varying Parameters," *IEEE Transactions on Automatic Control*, 60(3), pp. 684–699, 2015.
- [J<sub>5</sub>] **F. Farokhi**, K. H. Johansson, "Adaptive Control Design under Structured Model Information Limitation: A Cost-Biased Maximum-Likelihood Approach," *Systems & Control Letters*, 75, pp. 8–13, 2015.
- [J<sub>4</sub>] **F. Farokhi**, K. H. Johansson, "Stochastic Sensor Scheduling for Networked Control Systems," *IEEE Transactions on Automatic Control*, 59(5), pp. 1147–1162, 2014.
- [J<sub>3</sub>] **F. Farokhi**, C. Langbort, K. H. Johansson, "Decentralized Disturbance Accommodation with Limited Plant Model Information," *SIAM Journal on Control and Optimization*, 51(2), pp. 1543–1573, 2013.
- [J<sub>2</sub>] **F. Farokhi**, C. Langbort, K. H. Johansson, "Optimal Structured Static State-Feedback Control Design with Limited Model Information for Fully-Actuated Systems," *Automatica*, 49(2), pp. 326–337, 2013.
- [J<sub>1</sub>] P. M. Esfahani, **F. Farokhi**, M. Karimi-Ghartemani, "Optimal State-Feedback Design for Non-Linear Feedback-Linearisable Systems," *IET Control Theory & Applications*, 5(2), pp. 323–333, 2011.

## CONFERENCE PAPERS

*\*Accepted/Published Peer-Reviewed Conference/Workshop Papers\**

- [C<sub>71</sub>] **F. Farokhi**, "Privacy Against Hypothesis-Testing Adversaries for Quantum Computing," in *Proceedings of the 62nd IEEE Conference on Decision and Control (CDC 2023)*, Dec 13-15, 2023, Singapore.
- [C<sub>70</sub>] D. D. Selvaratnam, **F. Farokhi**, I. Shames, H. Sandberg, "Manipulating the Posterior Support of a Discrete Bayesian Estimator Under Full Sensor Control," in *Proceedings of the International Federation of Automatic Control (IFAC) World Congress*, July 9-14, 2023, Yokohama, Japan.
- [C<sub>69</sub>] **F. Farokhi**, A. S. Leong, I. Shames, M. Zamani, "A Computationally-Friendly Data-Driven Safety Filter for Control-Affine Discrete-Time Systems Subject to Unknown Process Noise," in *Proceedings of the American Control Conference (ACC)*, May 31-June 2, 2023, San Diego, CA, USA.
- [C<sub>68</sub>] **F. Farokhi**, A. S. Leong, M. Zamani, I. Shames, "Safe Learning of Linear Time-Invariant Systems," Poster at *NeurIPS Safe and Robust Control of Uncertain Systems*, Dec 13, 2021, Virtual Conference.
- [C<sub>67</sub>] **F. Farokhi**, "Gradient Sparsification Can Improve Performance of Differentially-Private Convex Machine Learning," in *Proceedings of the 60th IEEE Conference on Decision and Control (CDC)*, Dec 13-15, 2021, Austin, TX, USA.
- [C<sub>66</sub>] N. Ding, Y. Liu, **F. Farokhi**, "A Linear Reduction Method for Local Differential Privacy and Log-lift," in *Proceedings of the 2021 IEEE International Symposium on Information Theory (ISIT)*, July 12-20, 2021, Virtual Conference (formerly Melbourne, Australia).
- [C<sub>65</sub>] **F. Farokhi**, "Optimal Pre-Processing for Fairness and Its Relationship with Total Variation Barycenter," Poster at *ICLR-21 Workshop on Responsible AI*, May 8, 2021, Virtual Conference (formerly Vienna, Austria).
- [C<sub>64</sub>] **F. Farokhi**, "Using Renyi-Divergence and Arimoto-Renyi Information to Quantify Membership Information Leakage," in *Proceedings of the 55th Annual Conference on Information Sciences and Systems (CISS)*, March 24-26, 2021, Virtual Conference (formerly Baltimore, MD, USA).
- [C<sub>63</sub>] **F. Farokhi**, G. Nair, "Non-Stochastic Private Function Evaluation," in *Proceedings of the 2020 IEEE Information Theory Workshop (ITW)*, April 11-15, 2021, Virtual Conference (formerly Riva del Garda, Italy).
- [C<sub>62</sub>] **F. Farokhi**, N. Ding, "Measuring Information Leakage in Non-stochastic Brute-Force Guessing," in *Proceedings of the 2020 IEEE Information Theory Workshop (ITW)*, April 11-15, 2021, Virtual Conference (formerly Riva del Garda, Italy).
- [C<sub>61</sub>] A. Saberi, **F. Farokhi**, G. Nair, "An Explicit Formula for the Zero-Error Feedback Capacity of a Class of Finite-State Additive Noise Channels," in *Proceedings of the IEEE International Symposium on Information Theory (ISIT)*, June 21-26, 2020, Virtual Conference (formerly Los Angeles, CA, USA).
- [C<sub>60</sub>] **F. Farokhi**, "Temporally Discounted Differential Privacy for Evolving Datasets on an Infinite Horizon," in *Proceedings of the 11th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS)*, Apr 22-24, 2020, Virtual Conference (formerly Sydney, Australia).
- [C<sub>59</sub>] N. Wu, **F. Farokhi**, D. Smith, M. A. Kaafar, "The Value of Collaboration in Convex Machine Learning with Differential Privacy," in *Proceedings of the 41st IEEE Symposium on Security and Privacy*, May 18-20, 2020, Virtual Conference (formerly San Francisco, CA, USA).
- [C<sub>58</sub>] A. Zafar, **F. Farokhi**, M. Cantoni, "Linear Quadratic Control Computation for Systems with a Directed Tree Structure," in *Proceedings of the 21st World Congress of the International Federation of Automatic Control (IFAC)*, July 12-17, 2020, Virtual Conference (formerly Berlin, Germany).
- [C<sub>57</sub>] J. Kim, **F. Farokhi**, I. Shames, H. Shim, "Toward Nonlinear Dynamic Control over Encrypted Data for Infinite Time Horizon," Late-Breaking Results at *the 21st World Congress of the International Federation of Automatic Control (IFAC)*, July 12-17, 2020, Virtual Conference (formerly Berlin, Germany).
- [C<sub>56</sub>] C. Murguia, I. Shames, **F. Farokhi**, D. Nescic, "Privacy Against State Estimation: An Optimization Framework based on the Data Processing Inequality," in *Proceedings of the 21st World Congress of the International Federation of Automatic Control (IFAC)*, July 12-17, 2020, Virtual Conference (formerly Berlin, Germany).
- [C<sub>55</sub>] **F. Farokhi**, "A Fundamental Bound on Performance of Non-Intrusive Load Monitoring with Application to Smart Meter Privacy," in *Proceedings of the 21st World Congress of the International Federation of Automatic Control (IFAC)*, July 12-17, 2020, Virtual Conference (formerly Berlin, Germany).
- [C<sub>54</sub>] **F. Farokhi**, "Non-Stochastic Hypothesis Testing with Application to Privacy Against Hypothesis-Testing Adversary," in *Proceedings of the 58th IEEE Conference on Decision and Control (CDC)*, Dec 11-13, 2019, Nice, France.

- [C<sub>53</sub>] A. Zafar, M. Cantoni, **F. Farokhi**, "Optimal Control Computation for Cascade Systems by Structured Jacobi Iterations," in *Proceedings of the 8th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys)*, Sept 16-17, 2019, Chicago, IL, USA.
- [C<sub>52</sub>] A. Saberi, **F. Farokhi**, G. Nair, "State Estimation via Worst-Case Erasure and Symmetric Channels with Memory," in *Proceedings of the IEEE International Symposium on Information Theory (ISIT)*, July 7-12, 2019, Paris, France.
- [C<sub>51</sub>] J. Tran, **F. Farokhi**, M. Cantoni, I. Shames, "Digital Implementation of Homomorphically Encrypted Feedback Control for Cyber-Physical Systems," in *Proceedings of the 2nd Workshop on Cyber-Physical Systems Security and Resilience (CPS-SR), Cyber-Physical Systems and Internet-of-Things (CPS-IoT) Week*, Apr 15, 2019, Montreal, Canada.
- [C<sub>50</sub>] **F. Farokhi**, P. M. Esfahani, "Security versus Privacy," in *Proceedings of the 57th IEEE Conference on Decision and Control (CDC)*, Dec 17-19, 2018, Miami Beach, FL, USA.
- [C<sub>49</sub>] Y. Lin, **F. Farokhi**, I. Shames, D. Nešić, "Secure Control of Nonlinear Systems Using Semi-Homomorphic Encryption," in *Proceedings of the 57th IEEE Conference on Decision and Control (CDC)*, Dec 17-19, 2018, Miami Beach, FL, USA.
- [C<sub>48</sub>] C. Murguia, I. Shames, D. Nešić, **F. Farokhi**, "On Privacy of Quantized Sensor Measurements through Additive Noise," in *Proceedings of the 57th IEEE Conference on Decision and Control (CDC)*, Dec 17-19, 2018, Miami Beach, FL, USA.
- [C<sub>47</sub>] **F. Farokhi**, I. Shames, "Bilateral Trade Under Information Asymmetry and Quantized Measurements," in *Proceedings of the 57th IEEE Conference on Decision and Control (CDC)*, Dec 17-19, 2018, Miami Beach, FL, USA.
- [C<sub>46</sub>] A. Saberi, **F. Farokhi**, G. Nair, "Estimation and Control over a Nonstochastic Binary Erasure Channel," in *Proceedings of the 7th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys)*, Aug 27-28, 2018, Groningen, the Netherlands.
- [C<sub>45</sub>] M. Cantoni, A. Zafar, **F. Farokhi**, "Scalable Iterations for Solving Constrained LQ Control Problems with Cascade Dynamics," in *Proceedings of the 23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS)*, July 16-20, 2018, Hong Kong.
- [C<sub>44</sub>] **F. Farokhi**, D. Selvaratnam, I. Shames, "Security Analysis of Quantized Bayesian Estimators," in *Proceedings of the 23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS)*, July 16-20, 2018, Hong Kong.
- [C<sub>43</sub>] M. Zamani, L. Sadeghikhorrani, A. A. Safavi, **F. Farokhi**, "Secure State Estimation Using Semi-homomorphic Encryption," in *Proceedings of the 23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS)*, July 16-20, 2018, Hong Kong.
- [C<sub>42</sub>] **F. Farokhi**, I. Shames, "Compressive Sensing in Fault Detection," in *Proceedings of the American Control Conference (ACC)*, June 27-29, 2018, Milwaukee, WI, USA.
- [C<sub>41</sub>] **F. Farokhi**, H. Sandberg, "Optimal Constrained Additive Noise Distribution Minimizing Fisher Information for Ensuring Privacy," in *Proceedings of the 56th IEEE Conference on Decision and Control (CDC)*, Dec 12-15, 2017, Melbourne, Australia.
- [C<sub>40</sub>] **F. Farokhi**, I. Shames, K. H. Johansson, "Private and Secure Coordination of Match-Making for Heavy-Duty Vehicle Platooning," in *Proceedings of the 20th World Congress of the International Federation of Automatic Control (IFAC)*, July 9-14, 2017, Toulouse, France.
- [C<sub>39</sub>] **F. Farokhi**, J. Milosevic, H. Sandberg, "Optimal State Estimation with Measurements Corrupted by Laplace Noise," in *Proceedings of the 55th IEEE Conference on Decision and Control (CDC)*, Dec 12-14, 2016, Las Vegas, NV, USA.
- [C<sub>38</sub>] I. Shames, **F. Farokhi**, M. Cantoni, "Guaranteed Maximum Power Point Tracking by Scalar Iterations with Quadratic Convergence Rate," in *Proceedings of the 55th IEEE Conference on Decision and Control (CDC)*, Dec 12-14, 2016, Las Vegas, NV, USA.
- [C<sub>37</sub>] **F. Farokhi**, I. Shames, "Preserving Privacy of Agents in Participatory-Sensing Schemes for Traffic Estimation," in *Proceedings of the 55th IEEE Conference on Decision and Control (CDC)*, Dec 12-14, 2016, Las Vegas, NV, USA.
- [C<sub>36</sub>] **F. Farokhi**, I. Shames, N. Batterham, "Secure and Private Cloud-Based Control Using Semi-Homomorphic Encryption," in *Proceedings of the 6th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys)*, Sept 8-9, 2016, Tokyo, Japan.
- [C<sub>35</sub>] **F. Farokhi**, G. Nair, "Privacy-Constrained Communication," in *Proceedings of the 6th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys)*, Sept 8-9, 2016, Tokyo, Japan.
- [C<sub>34</sub>] **F. Farokhi**, M. Cantoni, I. Shames, "A Game-Theoretic Approach to Scheduling Rigid Demands on Dynamical Systems," in *Proceedings of the Australian Control Conference (AuCC)*, Nov 3-4, 2016, Newcastle, Australia.
- [C<sub>33</sub>] M. Cantoni, **F. Farokhi**, E. Kerrigan, I. Shames, "A Scalable QP Solver for Cascade Systems with Constrained Dynamics," in *Proceedings of the Australian Control Conference (AuCC)*, Nov 3-4, 2016, Newcastle, Australia.
- [C<sub>32</sub>] **F. Farokhi**, H. Sandberg, I. Shames, M. Cantoni, "Quadratic Gaussian Privacy Games," in *Proceedings of the 54th IEEE Conference on Decision and Control (CDC)*, Dec 15-18, 2015, Osaka, Japan.
- [C<sub>31</sub>] I. Shames, T. H. Summers, **F. Farokhi**, R. C. Shekhar, "Conditions and Strategies for Uniqueness of the Solutions to Cooperative Localization and Mapping Problems Using Rigidity Theory," in *Proceedings of the 54th IEEE Conference on Decision and Control (CDC)*, Dec 15-18, 2015, Osaka, Japan.
- [C<sub>30</sub>] **F. Farokhi**, M. Cantoni, I. Shames, "Scheduling Rigid Demands on Continuous-Time Linear Shift-Invariant Systems," in *Proceedings of the 54th IEEE Conference on Decision and Control (CDC)*, Dec 15-18, 2015, Osaka, Japan.
- [C<sub>29</sub>] **F. Farokhi**, M. Cantoni, "Distributed Negotiation for Scheduling Smart Appliances," in *Proceedings of the Australian Control Conference (AuCC)*, Nov 5-6, 2015, Gold Coast, Australia.
- [C<sub>28</sub>] **F. Farokhi**, K.-Y. Liang, K. H. Johansson, "Cooperation Pattern between Fleet Owners for Transport Assignments," in *Proceedings of the IEEE Conference on Control Applications (CCA)*, Sept 21-23, 2015, Sydney, Australia.
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- [C<sub>16</sub>] **F. Farokhi**, H. Sandberg, K. H. Johansson, "Complexity Reduction for Parameter-Dependent Linear Systems," in *Proceedings of the American Control Conference (ACC)*, June 17-19, 2013, Washington, DC, USA.
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- [C<sub>14</sub>] **F. Farokhi**, C. Langbort, K. H. Johansson, "Optimal Disturbance-Accommodation Design with Limited Model Information," in *Proceedings of the American Control Conference (ACC)*, June 27-29, 2012, Montreal, Canada.
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- [C<sub>10</sub>] **F. Farokhi**, H. Sandberg, "A Robust Control-Design Method Using Bode's Ideal Transfer Function," in *Proceedings of the Mediterranean Conference on Control and Automation (MED)*, June 20-23, 2011, Corfu Island, Greece.
- [C<sub>9</sub>] **F. Farokhi**, C. Langbort, K. H. Johansson, "Control Design with Limited Model Information," in *Proceedings of the American Control Conference (ACC)*, June 29-July 1, San Francisco, CA, USA.
- [C<sub>8</sub>] **F. Farokhi**, M. Haeri, M. S. Tavazoei, "On Comparison of Numerical Methods to Solve Nonlinear Fractional Order Differential Equations," in *Proceedings of the 3rd IFAC Workshop on Fractional Difference and its Application (FDA)*, Nov 15-17, 2008, Ankara, Turkey.

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- [C<sub>7</sub>] **F. Farokhi**, "Maximal Quantum Information Leakage", Presentation at *ANZCOP-AIP Summer Meeting 2023*, Dec 3-8, 2023, Canberra, Australia.
- [C<sub>6</sub>] G. Zafzouf, **F. Farokhi**, G. Nair, "Asymptotically Optimal Worst-Case State Estimation over Noisy Channels", Invited Paper at *2022 58th Annual Allerton Conference on Communication, Control, and Computing (Allerton)*, Sept 27-30, 2022, Monticello, IL, USA.
- [C<sub>5</sub>] **F. Farokhi**, "Safe Learning of Uncertain Environments for Nonlinear Control-Affine Systems", Invited Presentation at *TTCP AER TP-12: Unmanned Aerial System's in Contested, Denied and Extreme Environments Workshop*, April 15, 2021, Virtual.
- [C<sub>4</sub>] A. Saberi, **F. Farokhi**, G. Nair, "Nonstochastic Channel Models for Bounded State Estimation and Control," Invited Presentation at *2018 56th Annual Allerton Conference on Communication, Control, and Computing (Allerton)*, Sept 2-5, 2018, Monticello, IL, USA.
- [C<sub>3</sub>] **F. Farokhi**, "Non-Stochastic Privacy," Invited Presentation at *Workshop on Optimisation in Systems Engineering*, June 6, 2019, Melbourne, Australia.
- [C<sub>2</sub>] **F. Farokhi**, "Monitoring and Control Systems with Crowd-Sourced Sensing and Actuation," Invited Presentation at *the 3rd Australian Applied Dynamics Workshop*, Feb 1-2, 2018, Australia.
- [C<sub>1</sub>] **F. Farokhi**, "Estimation with Strategic Sensors with Application to Privacy-Constrained Communication," Invited Presentation at *the Applied Dynamics Workshop*, Feb 4-5, 2016, Blue Mountains, Australia.

## BOOK CHAPTERS

- [B<sub>5</sub>] Y. Lin, **F. Farokhi**, I. Shames, D. Nešić, "Secure Networked Control Systems Design Using Semi-Homomorphic Encryption," in R. Ferrari, A. Teixeira, (Eds.), *Safety, Security, and Privacy for Cyber-Physical Systems*, Lecture Notes in Control and Information Sciences, Springer, 2021.
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#### OUTREACH AND MEDIA

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- [M<sub>3</sub>] H. Asghar, **F. Farokhi**, M. A. Kaafar, B. Rubinstein, "On the privacy of TraceTogether, the Singaporean COVID-19 contact tracing mobile app, and recommendations for Australia," Ingenium, Melbourne School of Engineering, April 6, 2020. <https://eng.unimelb.edu.au/ingenium/research-stories/world-class-research/real-world-impact/on-the-privacy-of-tracetgether,-the-singaporean-covid-19-contact-tracing-mobile-app,-and-recommendations-for-australia>
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- [M<sub>1</sub>] **F. Farokhi**, Interview, The Daily at 2SER, "Are Route Mapping Apps Truly Private?," May 2016.

#### TEACHING EXPERIENCE

2021-2023	<b>ELEN90066 Embedded System Design (Lecturer/Subject Coordinator)</b>	The University of Melbourne
2021-2023	<b>ELEN30012 Signals and Systems (Lecturer/Subject Coordinator)</b>	The University of Melbourne
2017	<b>ELEN90080 Secure Cyberphysical Systems (Lecturer)</b>	The University of Melbourne
2016-2017	<b>ELEN30011 Electrical Device Modelling (Guest Lecturer)</b>	The University of Melbourne
2014	<b>ELEN90026 Introduction to Optimisation (Guest Lecturer)</b>	The University of Melbourne

#### ACADEMIC VISITS AND INVITED TALKS

KTH Royal Institute of Technology (2015, 2016, 2018, 2019), ETH Zürich (2018), ShanghaiTech University, Tsinghua University, Chinese Academy of Sciences (2017), Defence Science Institute (DSI) and Raytheon (2017), University of Illinois at Urbana-Champaign (2011, 2016), Lund University (2016), Delft University of Technology (2016), Tokyo Institute of Technology (2015), Monash University, Rubicon Water pty ltd, IBM Research-Australia, University of Newcastle (2015), Australian National University (2014), Scania AB (2014), Ruhr-Universität Bochum (2014), MIT Massachusetts Institute of Technology (2013), Université Catholique de Louvain (2012), Stanford University (2011)

#### STUDENT SUPERVISION

2023-Present	<b>Y. Bu, PhD, co-supervisor (with R. Evans, A. Melatos)</b>	The University of Melbourne
2018-2022	<b>G. Zafzouf, PhD, co-supervisor (with G. Nair)</b>	The University of Melbourne
2017-2021	<b>A. Saberi, PhD, co-supervisor (with G. Nair)</b>	The University of Melbourne
2017-2021	<b>A. Zafar, PhD, co-supervisor (with M. Cantoni)</b>	The University of Melbourne
2014-2015	<b>M. Fasani, G. Maronati, Exchange MSc, co-supervisor (with M. Cantoni)</b>	The University of Melbourne
2023-Present	<b>Z. Wu, J. H. Low, D. Hao, Honour, co-supervisor (with Sejeong Kim)</b>	The University of Melbourne
2022-2023	<b>C. Wang, Y. Wang, S. Cao, Honour, co-supervisor (with Ye Pu)</b>	The University of Melbourne
2022-2023	<b>Y. Feng, D. Ding, L. Mi, Honour, co-supervisor (with P. Beuchat)</b>	The University of Melbourne
2022	<b>Q. Liu, P. Wang, Z. Fan, Honour, supervisor</b>	The University of Melbourne
2021	<b>K. Yeoh, A. Recamadas, Honour, co-supervisor (with P. Beuchat)</b>	The University of Melbourne
2018	<b>C. D. Perera, J. Tran, K. Ngo, Honour, co-supervisor (with M. Cantoni, I. Shames)</b>	The University of Melbourne
2017-2018	<b>Q. Li, Z. Li, B. Wu, Honour, co-supervisor (with M. Cantoni, I. Shames)</b>	The University of Melbourne
2017-2018	<b>S. Chen, X. Xiang, W. Gao, Honour, co-supervisor (with M. Cantoni, I. Shames)</b>	The University of Melbourne
2017-2018	<b>A. Shah, F. Hu, K. Zhong, Honour, co-supervisor (with M. Cantoni, I. Shames)</b>	The University of Melbourne
2016-2017	<b>X. Wang, L. Zou, Z. Sun, Honour, co-supervisor (with M. Cantoni)</b>	The University of Melbourne
2016-2017	<b>P. Zhang, C. Liang, X. Yu, Honour, co-supervisor (with I. Shames)</b>	The University of Melbourne
2015-2016	<b>W. Yuhan, Y. Wentao, Z. Qin, Honour, co-supervisor (with I. Shames)</b>	The University of Melbourne

2015	<b>T. Martin, B. Malandra, Honour, co-supervisor (with I. Shames)</b>	The University of Melbourne
2015	<b>T. Mcnicol, N. Batterham, Honour, co-supervisor (with I. Shames)</b>	The University of Melbourne
2019	<b>S. Mahjabin, Master of Research, co-supervisor (with D. Vatsalan, D. Kaafar)</b>	Data61, CSIRO
2018-2019	<b>N. Wu, Master of Research, co-supervisor (with D. Smith, D. Kaafar)</b>	Data61, CSIRO
2018-2019	<b>N. U. Sheikh, Master of Research, co-supervisor (with H. J. Asghar, D. Kaafar)</b>	Data61, CSIRO
2014	<b>M. Biel, BSc, co-supervisor (with H. Sandberg)</b>	KTH Royal Institute of Technology
2013	<b>A. P. Tellez, J. Roth, E. Hallqvist, S. Håkansson, BSc, supervisor</b>	KTH Royal Institute of Technology
2012	<b>E. Ehrlin, M. Törnqvist, BSc, supervisor</b>	KTH Royal Institute of Technology
2012	<b>C. Olsson, L. Brandt, T. Axelsson, BSc, supervisor</b>	KTH Royal Institute of Technology
2011	<b>I. Tjernberg, J. Lindberg, K. Hansson, BSc, co-supervisor (with J. Araujo)</b>	KTH Royal Institute of Technology

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## PROFESSIONAL ACTIVITIES

- IEEE Transactions on Control of Network Systems (2023-Present)
- Associate Editor IET Smart Grid (2020-2022)
- Associate Editor for Results in Control and Optimization (2020-2022)
- Associate Editor for Contributed Papers in IEEE Conference on Decision and Control (CDC 2022, 2023)
- Associate Editor for Contributed Papers in American Control Conference (ACC 2022-2024)
- Associate Editor at Large (Technical Program Committee) in IEEE Conference on Decision and Control (CDC 2023)
- Technical Program Committee for IEEE International Workshop on Information Forensics and Security (WIFS 2021, 2022)
- Technical Program Committee for Workshop on Machine Learning Security and Privacy: Experiences and Applications
- Technical Program Committee for IEEE International Workshop on Artificial Intelligence for Mobile (AI4Mobile'19)

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## REFERENCES

Available upon request.