KEVIN M. SMITH

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SUMMARY

- Ph.D. student in Environmental and Water Resources Engineering at Tufts University
- Researching semi-autonomous civil infrastructure as a technology for mediating environmental conflicts
- Recipient of the NSF Integrative Graduate Education and Research Traineeship (IGERT) on Water and Diplomacy
- Interests: Water and Diplomacy, Science and Technology Studies, Social Choice, Risk Measures, Human-Robot Interaction

EDUCATION

- Ph.D. Student, Environmental and Water Resources Engineering, Tufts University, since 2013 (Advisor: Dr. Shafiqul Islam)
- B.S., Earth and Environmental Engineering, Columbia University, 2013 (Cum Laude, Tau Beta Pi)
- B.A., Environmental Studies, Oberlin College, 2013 (Joyce Gorn Memorial Prize for Research)

PROFICIENCIES

- **Environmental Monitoring**: field methods, sensor and data logger design, serial protocols, wireless telemetry
- **Scientific Computing**: R, MATLAB/GNU Octave, C#, Python, SQL; high-performance clusters and cloud computing

PUBLICATIONS IN REVIEW

- **On Exponential Utility and Conditional Value-at-Risk as Risk-Averse Performance Criteria**
  - **K. M. Smith**, M. P. Chapman,
  - under review for IEEE Transactions on Control Systems Technology, submitted August 2021, arxiv.org/abs/2108.01771.
- **Risk-sensitive safety analysis via state-space augmentation**
  - M. P. Chapman, M. Faußß, H. V. Poor, **K. M. Smith**
  - under review for IEEE Transactions on Automatic Control, submitted June 2021, arxiv.org/abs/2106.00776.

REFEREED CONFERENCE PUBLICATIONS

- **2019** - **A Risk-Sensitive Finite-Time Reachability Approach for Safety of Stochastic Dynamic Systems**
  - M. P. Chapman, J. Lacotte, A. Tamar, D. Lee, **K. M. Smith**, V. Cheng, J. F. Fisac, S. Jha, M. Pavone, C. J. Tomlin
  - 2019 American Control Conference (ACC), pp. 2958-2963, doi: 10.23919/ACC.2019.8815169.
- **2018** - **Reachability Analysis as a Design Tool for Stormwater Systems**
  - M. P. Chapman, **K. M. Smith**, V. Cheng, D. L. Freyberg, C. J. Tomlin
  - 2018 IEEE Conference on Technologies for Sustainability (SusTech), pp. 1-8, doi: 10.1109/SusTech.2018.8671362.

REFEREED JOURNAL PUBLICATIONS

- **2021 - Risk-sensitive safety analysis using Conditional Value-at-Risk**
  - M. P. Chapman, R. Bonalli, **K. M. Smith**, I. Yang, M. Pavone, C. J. Tomlin
  - IEEE Transactions on Automatic Control, 1558-2523, doi: 10.1109/TAC.2021.3131149.
- **2021 - Classical Risk-Averse Control for a Finite-Horizon Borel Model**
  - M. P. Chapman, **K. M. Smith**
  - IEEE Control Systems Letters, 2475-1456, doi: 10.1109/LCSYS.2021.3114126.
- **2021** - **Addressing Complex Challenges in Coupled Natural and Human Systems Through Principled Pragmatism**
  - **K. M. Smith**, W. Palash, E. Choudhury, S. Islam
  - Frontiers in Water, Volume 3, 2021, doi: 10.3389/frwa.2021.61725.
- **2014** - **Forecasting Energy Consumption of Multi-family Residential Buildings Using Support Vector Regression**
  - R. K. Jain, **K. M. Smith**, P. J. Culligan, J. E. Taylor
  - Applied Energy, Volume 123, 2014, pp. 168-178, doi: 10.1016/j.apenergy.2014.02.057.

EDITED VOLUMES

- **2022** - **The Routledge Handbook on Water Diplomacy** (under contract)
  - Edited by S. Islam, **K. M. Smith**, M. Klimes, A. Salzberg
- **2020** - **Interdisciplinary Collaboration for Water Diplomacy: A Principled and Pragmatic Approach**
  - Edited by S. Islam, **K. M. Smith**
  - Routledge. Abingdon, Oxon. Earthscan Series in Water Resource Management. 306 pages. ISBN: 9781138369283

SOFTWARE

- **Arduino SDI-12** (C++) *github.com/EnviroDIY/Arduino-SDI-12*
  - first open-source library implementing the SDI-12 communication protocol for open-hardware Arduino-based data loggers
  - originally authored in 2013 by **K. M. Smith**, now maintained by S. Damiano.