

Clayton Schoeny

Data Scientist

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Education

University of California, Los Angeles (UCLA):

- 2014–2018 **Ph.D. Electrical and Computer Engineering.**
 - Dissertation: *Coding for Future Large-Scale Data Systems*
 - Graduate Student Researcher: Laboratory for Robust Information Systems (LORIS)
 - GPA: 4.0
- 2012–2014 **M.S. Electrical Engineering.**
 - Thesis: *Efficient File Synchronization*
 - Graduate Student Researcher: Laboratory for Robust Information Systems (LORIS)
 - Focus: Communication Systems
- 2007–2012 **B.S. Electrical Engineering.**
 - Minor: Mathematics
 - Senior Design Project: Interactive Speech Recognition
 - Latin Honors: *Cum Laude*

Honors & Awards

- 2017–2018 Distinguished PhD Dissertation in Signals & Systems Award
 - 2018 Best Paper Award: IEEE Workshop on Silicon Errors in Logic – System Effects
 - 2018 Memorable Paper Award Finalist: Non-Volatile Memories Workshop
- 2017–2018 UCLA Dissertation Year Fellowship
 - 2017 Best Paper Award: ACM/IEEE Embedded Systems Week
- 2016–2017 Qualcomm Innovation Fellowship Winner
 - 2016 Best Paper Award: IEEE Workshop on Silicon Errors in Logic – System Effects
- 2015–2016 Qualcomm Innovation Fellowship Finalist
- 2014–2015 Henry Samueli Excellence in Teaching Award

Computer & Math Skills

- Preferred Python: Pandas, NumPy, SciPy, Scikit-Learn, NetworkX, Matplotlib, Seaborn, Bokeh, SQLAlchemy, Jupyter
- Certification DataCamp: Data Science Track (20 courses)
- Experienced MATLAB, C++, Excel, LaTeX
- Advanced Probability, Linear Algebra, Combinatorics, Calculus, Statistics, Information Theory

Industry Experience

- Jun-Sep 2015 **Space and Naval Warfare Systems Command (SPAWAR)**, *Point Loma, CA*.
Naval Research Enterprise Internship—Command and Control
- Established fundamental bounds and constructed an asymptotically optimal error-correcting code (for channels with burst deletions) for the US Navy to efficiently synchronize command and control data in disconnected, intermittent, and low-bandwidth environments.
- Jun-Sep 2013 **DIRECTV**, *El Segundo, CA*.
Apr-Sep 2012 Internship—Space and Communications, Video Systems Engineering
- Created a dynamic spreadsheet to track vital characteristics of network channels in 200+ local TV markets.
 - Modeled the probabilistic system-level effects of a proposed bit-rate harvesting scheme.
 - Diagrammed the transition of a broadcast center from ATM to IP architecture.
- Jun-Nov 2011 **The Aerospace Corporation**, *El Segundo, CA*.
Jun-Sep 2010 Internship—Communication Systems Engineering Department
- Wrote MATLAB and C++ scripts to analyze the performance of the Wideband Global SATCOM System; presented to the Air Force with recommendations for future actions.
 - Developed code that modeled a hacker attempting to interfere with secure communications; successfully implemented into larger software platform.

Selected Publications

Journal Articles

- 2018 **C. Schoeny**, F. Sala, M. Gottscho, I. Alam, P. Gupta, L. Dolecek, "Context-Aware Resiliency: Unequal Message Protection for Random-Access Memories," *IEEE Transactions on Information Theory* (submitted).
- 2017 M. Gottscho, I. Alam, **C. Schoeny**, L. Dolecek, P. Gupta, "Low-Cost Memory Fault Tolerance for IoT Devices," *ACM Transactions on Embedded Computing Systems – Special Issue ESWEEK 2017*, vol. 16, no 5., Oct. 2017 (Best paper award).
- 2017 **C. Schoeny**, A. Wachter-Zeh, R. Gabrys, E. Yaakobi, "Codes Correcting a Burst of Deletions or Insertions," *IEEE Transactions on Information Theory* vol. 63, no 4., Jan. 2017.

Conference Publications

- 2017 **C. Schoeny***, F. Sala, L. Dolecek, "Novel Combinatorial Coding Results for DNA Sequencing and Data Storage," in *Proc. IEEE Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, Oct. 2017.
- 2016 M. Gottscho*, **C. Schoeny**, L. Dolecek, P. Gupta, "Software-Defined Error-Correcting Codes," in *Proc IEEE/IFIP Int. Conf. on Dependable Systems and Networks (DSN)*, Toulouse, France, Jun.-Jul. 2016.

Book Chapters

- 2016 F. Sala, **C. Schoeny**, L. Dolecek, "Advanced Algebraic and Graph-Based ECC Schemes for Flash Memories," in *3D Flash Memories*, Rino Micheloni, Ed. Springer, 2016, pp. 321 – 348.