Nicholas Rossi

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EDUCATION

GRADUATE
PhD : Boston University
2019 | Boston, MA
Molecular Biology, Cell Biology & Biochemistry

UNDERGRADUATE
BS : University of Minnesota
2008 | Minneapolis, MN
Microbiology

SKILLS

DATA SCIENCE AND STATISTICS
Statistical Programming (numpy, scipy, pandas) • Machine Learning (Scikit-Learn, TensorFlow) • Time-Series Analysis • Synthesis of Analytic and Computational Methods• Image Processing
Ex: tinyurl.com/y7n9rrdn
Ex2: tinyurl.com/y7evxrjv
Ex3: tinyurl.com/y7sff6su

LANGUAGES
Professional:
English • French
Functional:
Mandarin • Bambara

MISCELLANEOUS
Music generation AI • Generative visual art • Programmable microcontrollers (arduino, Drone controllers)• Amateur Electronics• Data Journalism • Wikipedia Animation Contributor

github.com/NicholasARossi

AWARDS

2016:
Chateaubriand STEM Fellow
2014:
First in Class: UVM Computer Science Fair

INDUSTRY

SYNTHEGO | Bioinformatics Data scientist
2019 – Present
- **Built machine learning models** in order to tease out complex relationships in noisy, biological data.
- **Wrote production quality code** that served as the algorithmic kernel of many of our software products.
- **Supported a cross-disciplinary research team** by rapidly prototyping software tools to make life easier for biologists at the bench.

RESEARCH // DEVELOPMENT

THE DUNLOP LAB (SYSTEMS BIOLOGY) | Graduate Student
September 2013 – 2019 | Boston University (Boston, MA)
- **Extracted meaningful, actionable conclusions** from complex, disparate biological data sources.
- **Wrote clean, reusable Python code** and shell-scripts for use throughout the lab and on the computing cluster.
- **Built statistical models** to better understand emergent trends in non-linear, noisy data.

Video Explanation of Research: youtube.com/watch?v=LdlsapSk2-o
Ex: Rossi et. al. 2017
Ex2: Rossi et. al. 2019

THE WALCZAK LAB (PHYSICS) | Chateaubriand Visiting Fellow
September 2016 – December 2016 | Ecole Normale Superieur (Paris, France)
- **Derived analytical solutions** to probabilistic systems using information theory and statistical mechanics.
- **Explored the biological design space** with computational and statistical tools.

Ex: Rossi et. al. 2018

PEACE CORPS | Science Educator & Curriculum Developer
Jul 2008 – July 2011 | Lanfiera, Burkina Faso & Bamako, Mali
- **Developed hands-on curriculum** for teaching the scientific method and French as a foreign language to students
- **Taught Biology and Math** to classes of 160 students, across 5 different grades

PUBLICATIONS

2019 **COMMUNICATIONS BIOLOGY**
Forecasting cell fate during antibiotic exposure using stochastic gene expression
Nicholas A. Rossi, Imane El Meouche, Mary J. Dunlop

2018 **PLOS COMPUTATIONAL BIOLOGY**
Active degradation of MarA controls coordination of its downstream targets
Nicholas A. Rossi, Theirry Mora, Aleksandra M. Walczak, Mary J. Dunlop

2018 **CELL SYSTEMS**
Making Waves with Synthetic Oscillators
Nicholas A. Rossi, Mary J. Dunlop

2017 **PLOS COMPUTATIONAL BIOLOGY**
Customized Regulation of Diverse Stress Response Genes by the Multiple Antibiotic Resistance Activator MarA
Nicholas A. Rossi, Mary J. Dunlop