Nicholas Rossi

A Bay-Area **Machine Learning Scientist** looking to help build something new

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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 IN ACTION

PUBLIC ML APPS

tinghaole.com
: a Mandarin tone practice app powered by deep learning.

听好了 ting hao le mandarin deep-learning platform

ML TUTORIALS

• Part 1 • Part 2 • Part 3 • Part 4

DATA SCIENCE STORIES

• Story 1. • Story 2. • Story 3.

ML COMPETITIONS

• Cochlear Implant Hackathon (February, 2021)
• Genetic Attribution Challenge (October, 2020)

SOFTWARE STACK

LANGUAGES

WEB FRAMWORKS

• Django • Flask • NGINX

MACHINE LEARNING

• Keras • Pytorch • Tensorflow • Pandas • Dask • DEAP • H20ai • scikit-learn

INFRASTRUCTURE

• AWS • Circle CI • Docker • Ansible • Terraform • Linux • CodeCov

DATABASE

• postgresSQL • mySQL • Amazon RDS • snowflake

INDUSTRY

SYNTHEGO | Senior Machine Learning Engineer

September 2020 – Present

- **Lead production deployments** of full-stack machine-learning apps (AWS/Django/Docker) powered by scikit-learn, LGBM or deep-learning frameworks (tensorflow/keras) in order to predict CRISPR editing outcomes.
- **Directed ML ops** by guiding "metrics-first" continuous improvement of our DNA sequence model-stack. Connecting instance version control with training-data provenance.
- **Innovated novel ML techniques** including active-learning and uncertainty quantification (TF probability; Bayesian NNs) to mitigate risk in design intelligence recommendation engines.

→ | Bioinformatics Data scientist

March 2019 – September 2020

- **Built novel algorithms** when open-source solutions won't cut it : including a probabilistic alignment suite using dynamic-programming and a recursive computation of maximal hamming distance for novel DNA bar-coding
- **Wrote production quality code** demonstrating DRYness, modularity, readability, robust testing and agile continuous improvement; always committing early and often
- **Supported a cross-disciplinary research team** by rapidly prototyping software tools to make life easier for end-users at the bench while at the same time carrying out consistent code-review for other software teams

Ex: Hsiau et. al. 2021

RESEARCH // DEVELOPMENT

THE DUNLOP LAB (SYSTEMS BIOLOGY) | Graduate Student

September 2013 – 2019 | Boston University (Boston, MA)

- **Built statistical models** to better understand high-dimensional emergent trends in non-linear, noisy data - driving meaningful actionable research decisions

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)

- **Built a large mathematical toolbox** - computed analytical solutions to stochastic differential equations to infer the dynamic mutual information within genetic networks.
- **Used computational power surgically** by combining analytical solutions with computational simulations I solved problems quickly while lowering the burden on the compute clusters.

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