Anthony F. Cannistra

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100 Puppy Smith Street, Aspen, CO 81611 USA

Education

University of Washington
Seattle, WA

Degree Ph.D. candidate, Biology (*beginning September 2016*)

Focus Application of machine learning techniques to ecological data in an effort to inform resource preservation and conservation efforts. Advised by Dr. Lauren Buckley.

Tufts University
Medford, MA

Degree B.S., Computer Science and Biology, Cum Laude. (2011-2015)

GPA 3.53/4.0 (Dean's List)

Coursework Machine Structure and Assembly Language Programming, Data Structures, Programming Languages, Computational Biology, Algorithms, Genetics, Computation Theory, Evolutionary Biology, Neuroscience, Concurrent Programming, Machine Learning, Conflict Resolution and Negotation, Distributed Systems

Leadership Organizer, TEDxTufts; Co-President, Tufts Idea Exchange; Co-Project Lead, TuftsLife; Executive Board Member, Tufts Computer Science Exchange; Lodge Caretaker, Tufts Mountain Club; Tour Guide, Tufts Admissions

Experience (read more at `http://www.anthonycannistra.com`)

Mentor Naturalist, Aspen Center for Environmental Studies, June 2015–Present

- Led daily guided tours around the Aspen, Colorado area. Independently researched and developed content and delivery strategies engineered to foster a deep respect and curiosity for place in a diverse group of participants.
- Greeted guests, answered phones, and conducted on-site Naturalist duties at the Hallam Lake Nature Center in Aspen. Trained to become a Great Horned Owl handler.
- Taught weekly 3-hour morning environmental education classes to 4-6 year old students.
- Trained and evaluated the fifteen 2016 Summer Naturalists.

Researcher, Tufts University Computational Biology Research Group, May 2013–May 2015

- Funded by Professors Benjamin Hescott, Lenore Cowen, and Mark Crovella (BU) for work on network-based protein function prediction and biological network alignment.
- Developed and implemented algorithms in Python that built upon Hescott and Cowen's Diffusion State Distance (DSD) metric to incorporate genetic protein-protein interaction data into function prediction.
- Currently writing scientific paper describing algorithms for submission to a peer-reviewed journal.

Teaching Assistant, Tufts University Department of Computer Science, Fall 2012–May 2015

- 5 Semesters: Programming Languages, Data Structures, Problem Solving by Computer, Machine Structure and Assembly Language Programming, Introduction to Computer Science.
- Held office hours, labs, and graded programming assignments.

Research Assistant, Brown University Center for Computational Molecular Biology, Summer 2012

- Worked with Professor Benjamin Raphael and postdoctoral fellow Dr. Suzanne Sindi at the Brown Center for Computational Molecular Biology.
- Improved runtime, space efficiency, and usability of the GASVPro pipeline, a probabilistic toolkit for genomic structural variant analysis.

Publications

I. Fried, A. Cannistra, M.F. Cao, L. Cowen, and B. Hescott. "How should genetic interactions and physical interactions be combined to predict function in protein interaction networks?" *Pacific Symposium on Biocomputing*, January 2017. *Under Review.*

I. Fried, A. Cannistra, C. Carter, A. Piel, M. Crovella, and B. Hescott, "CANDL: Coarsely Aligning Networks with Diffusion and Landmarks." *International Conference on Intelligent Systems for Molecular Biology (ISMB)*, Late Breaking Research, 2015

Leadership

Conference Organizer, TEDxTufts, Spring 2014–May 2015

- Along with a core team of 9 others: researched, applied for, and acquired a University event license from TED Conferences to host our own independently-organized TEDxTufts event. Selected team of 35 students from over 100 applications. Recruited and mentored undergraduates, alumni, graduate students, postdoctoral scholars, faculty, and staff to present.
- Built statically-generated web presence for the event, at `http://www.tedxtufts.com`.

Project Lead, TuftsLife, Spring 2014–December 2014

- Gathered developers, designers, and concerned students to improve widely used University-centric event-sharing and classifieds site TuftsLife.com.
- Ensured that myriad groups across campus—students and administration alike—have their individual needs understood and satisfied.
- Began implementation for planned release in Fall 2014.

Skills

Languages	C, C++, Python, Erlang, Standard ML, Scheme, HTML, CSS, JavaScript
Tools	LaTeX, Git GitHub, Node.js, OS X, Windows, Unix/Linux, AWS S3 and EC2.

Passions

The Great Outdoors (hiking, climbing, ecological conservation, environmental education), public speaking, understanding others by understanding their stories, collaborative and consensus-driven decision making, critically examining higher education and it's greater purpose, the power and failures of the scientific method, thinking about how people use technology, supporting the spread and accessibility of great ideas, and reading powerful writing.