Ted Cybulski

Personal Information

Student, Medical Scientist Training Program
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Summary

I am a computationally-focused M.D./Ph.D. candidate looking to make small dents in big questions in human health. I am currently searching for research-focused internships and other opportunities to explore the intersections of medicine and health, biotechnology, and data science.

Education

Northwestern University, Chicago, IL

Ph.D. Candidate, Neuroscience — **August 2012 - Current**

- Advisor: Konrad Körding
- Anticipated Year of Graduation: 2017

M.D. Candidate, Feinberg School of Medicine — **June 2010 - Current**

- USMLE Step 1: 247, MCAT: 36Q
- Anticipated Year of Graduation: 2019

Massachusetts Institute of Technology, Cambridge, MA — **June 2010**

S.B., Biological Engineering

- Minors in Economics, Biology
- GPA: 4.7 / 5.0, Major GPA: 4.7 / 5.0

Experience

Northwestern University, Chicago, IL

Körding Laboratory, *Ph.D. Candidate* — **March 2011 - Current**

- Designed parallel dynamic algorithms to analyze the performance of DNA-based molecular recorders, implemented algorithms as GPU-based scripts
- Evaluated performance of sleep detection algorithms on data gathered from mobile phones in a large, diverse participant population
- Developed Bayesian techniques to evaluate access control of electronic health records in collaboration with researchers at Vanderbilt, University of Illinois, and Northwestern Memorial Hospital
- Quantified performance of next-generation neural imaging techniques using Fisher information

Tyo Laboratory, *Ph.D. Candidate* — **April 2013 - Current**

- Investigated use of DNA polymerase as a molecular recorder using kinetic *in vitro* experiments
- Designed, implemented analysis pipeline for gigabyte-scale next-generation sequencing data in collaboration with Northwestern biologists

Massachusetts Institute of Technology, Cambridge, MA

Sharp Laboratory, *Research Assistant* — **October 2008 - June 2010**

- Investigated knockdown of genes by Ago2 as a function of motif content in target 3'UTRs
- Investigated regulatory potential of cleaved tRNA and potential interactions with Ago2 using RNA secondary structure prediction

Publications & Presentations

Publications

- Have a first-author research publication in field-relevant computational neuroscience journal. Another manuscript under review at a flagship computational biology journal
- Several first-author research manuscripts are currently in preparation, and I have contributed to several research publications as middle author.

Presentations & Conferences

- Have presented research posters at the Society for Neuroscience annual meeting and the Gordon Research Conference on bioanalytical sensors, as well as a number of Northwestern colloquia.
- Have also presented at the American Association of Medical Colleges' annual meeting regarding volunteer work.

Leadership & Service

Northwestern University, Chicago, IL

Instructor, CPS Toyota Workshop **September 2015**

- Collaborated with a fellow graduate student to create neuroscience-based curriculum and experiments for one-day teaching workshop
- Lead didactic and small-group sessions with middle-school science teachers from Chicago Public Schools

Director, PRISM **April 2012 - June 2015**

(Promoting Inner-City Youth in Science and Medicine)

- Organized construction of medical- and science-centric curriculum, directing multiple teams while creating and reviewing content
- Organized and ran bi-weekly mentoring sessions for ten mentors and over twenty students at the Chicago McCormick Boys and Girls Club

Skills & Activities

Technical Skills

- Regularly use Python, along with the Biopython, PyMC, Keras, ScikitLearn packages
- Regularly use Matlab with GPU, parallel toolkits, have worked extensively with Mathematica and SQL
- Regularly use LaTeX typsetting, Adobe Illustrator, Microsoft and Google productivity software

Conceptual Skills

- Dynamic programming, machine learning, bioinformatics, probabilistic graphical models, Bayesian statistics

Memberships

- Society for Neuroscience, American Physician-Scientist Association, Tau Beta Pi

Activities

- Oversaw dance troupes with almost two-hundred members in college, have danced semi-professionally in Chicago
- Curated library of thousands of records as Assistant Music Director for CHIRP Radio in Chicago, held a regular show as DJ for several years
- Have achieved Competition Contributor rank on Kaggle, active on Project Euler programming challenges
- Avid chef, proficient in several modernist techniques