Marcus William Fedarko

Contact

Email: mfedarko@ucsd.edu
Webpage: https://fedarko.github.io

Education

Ph.D. Student, Computer Science — 9/2018–Present
University of California, San Diego — San Diego, CA
GPA: 3.35/4.0

B.S. with High Honors, Computer Science — 9/2014–5/2018
University of Maryland — College Park, MD
GPA: 3.81/4.0

Refereed Publications

1. Ghurye, J., Treangen, T., **Fedarko, M.**, Hervey, W. J., and Pop, M. (2019). "MetaCarvel: linking assembly graph motifs to biological variants." *Genome Biology, 20*(1), 1–14.
2. Meisel, J. S., Nasko, D. J., ... and Treangen, T. J. (2018). "Current progress and future opportunities in applications of bioinformatics for biodefense and pathogen detection: Report from the Winter Mid-Atlantic Microbiome Meet-up, College Park, MD January 10th, 2018." *Microbiome, 6*(1), 197.

Conference Presentations

1. **Fedarko, M.**, Ghurye, J., Treangen, T., and Pop, M. (2017). "MetagenomeScope: Web-Based Hierarchical Visualization of Metagenome Assembly Graphs." Poster presented at the *25th International Symposium on Graph Drawing and Network Visualization*, Boston, MA, USA.

Research Experience

Graduate Student — 9/2018–Present
University of California, San Diego — San Diego, CA
- **Advisor:** Rob Knight
- Designed Qurro, an interactive visualization tool for feature "rankings" and log-ratios: see https://biocore.github.io/qurro/.

Research Intern — 6/2016–8/2018
University of Maryland — College Park, MD
- **Advisors:** Mihai Pop, Todd Treangen
- Designed MetagenomeScope, an interactive visualization tool for metagenome assembly graphs: see https://marbl.github.io/MetagenomeScope/.

Teaching Experience

Course Assistant — 7/2018–8/2018
Marine Biological Laboratory — Woods Hole, MA
- **Courses:** Workshop on Molecular Evolution (MOLE); Strategies and Techniques for Analyzing Microbial Population Structures (STAMPS)
- Assisted with basic logistics for both courses.
- Helped students during some of the "laboratory" sections of the STAMPS course, including tutorials on Unix and Git.
- Prepared and gave a roughly hour-long presentation (including a tutorial) on MetagenomeScope during the STAMPS course as part of Todd Treangen's session on "Graph-based variant detection and strain-level analyses."

Undergraduate Teaching Assistant — 8/2016–12/2016
University of Maryland Dept. of Computer Science — College Park, MD

- **Course:** CMSC 330 ("Organization of Programming Languages")
- Assisted students with coursework (Ruby, OCaml, Prolog; grammars, regular languages, semantics, security) in office hours and on an online discussion board.
- Designed and graded quiz and exam questions.

Professional Experience

Student Staff Writer — 1/2015–9/2017
University of Maryland Dept. of Computer Science — College Park, MD

- Composed and edited articles for the department's website and other media.
- Assisted with the logistics of various department outreach functions.

Student Intern — 5/2013–8/2014
Axiometric — Columbia, MD

- Designed a graphical interface to an RF propagation model to assist clients in planning deployments of mesh networks of utility meters.
- Aided in the creation and maintenance of other utility meter deployment management software.

Intern Software Engineer — 7/2012–8/2012
Battlefield Telecommunications Systems — Columbia, MD

- Designed a web interface to monitor the connection strength of radio devices.
- Helped integrate this functionality into the company's existing network management user interface.

Honors and Awards

1. University of Maryland CMNS Dean's List — Fall 2014–Spr. 2018
2. University of Maryland Honors College University Honors Citation — 2017
3. Rita Colwell Travel Fellowship — 2017
4. Travel Award, U. of Michigan "Explore Graduate Studies" Workshop — 2017
5. John D. Gannon Endowed Scholarship — 2017
6. Corporate Partners in Computing Scholarship — 2016, 2017
7. Omicron Delta Kappa National Leadership Honor Society — 2016
8. Northrop Grumman Scholarship for Employees' Children — 2014
9. University of Maryland Dean's Scholarship — 2014