

Emily Scher

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EDUCATION

JOHNS HOPKINS UNIVERSITY | B.Sc. COMPUTER SCIENCE
Baltimore, Maryland
August 2011 – 2014

UNIVERSITY OF EDINBURGH | Ph.D. COMPUTATIONAL BIOLOGY
Edinburgh, United Kingdom
Supervised by Dr. Guido Sanguinetti and Shay Cohen
September 2015 – April 2020
Human Genome Interaction: Models for Designing DNA Sequences

WORK EXPERIENCE

UNIVERSITY OF EDINBURGH | POSTDOCTORAL RESEARCH ASSOCIATE
April 2020 – Present | Edinburgh, Scotland

- Working as part of the Rambaut group. Phylogenetics, machine learning, and software development in response to the coronavirus pandemic.

AMAZON | SOFTWARE DEVELOPMENT ENGINEER
March 2015 – August 2015 | Edinburgh, Scotland

- Worked at the Amazon Development Centre in Edinburgh, Scotland as part of the Recommendations Team. Left to pursue a PhD.

GOOGLE | SOFTWARE ENGINEERING INTERN
June 2014 – August 2014 | San Francisco, CA

- Developed Android and Web applications for the Google Wallet team

UNIVERSITY OF EDINBURGH, CAI LAB | RESEARCH ASSISTANT
September 2013 – May 2014 | Edinburgh, Scotland

- Developed applications for the design and characterization of DNA sequences, and for the automation of DNA synthesis. This work was funded by Autodesk.

CISCO SYSTEMS | SOFTWARE ENGINEERING INTERN
June 2013 – August 2013 | San Jose, CA

- Developed feedback loop prevention and visualization software for radio systems.
- Developed a 'quick installer' for the IPICS product.

JHU, BOEKE AND BADER LABS | RESEARCH ASSISTANT
Jan 2013 – May 2013 | Baltimore, MD

- Developed a Ruby on Rails web application for use in the Boeke and Bader labs.

JOHNS HOPKINS IGEM | SOFTWARE TEAM MEMBER
May 2012 – November 2012 | Baltimore, MD

- Part of a team of four which created a cloud-based tool for plasmid annotation and design, which won the Best Software award in the 2012 World iGEM Competition.

NAVAL MEDICAL RESEARCH CENTER | INTERN

Summers 2010 - 2012 | Silver Spring, MD

- Used purely computational techniques to predict potential targets for a Shigella subunit vaccine.

NATIONAL INSTITUTE OF STANDARDS IN TECHNOLOGY | INTERN

Summer 2008 | Gaithersburg, MD

- Web Development and Java programming in support of an Arabic-to-English translation software project.

SKILLS

Java, Javascript, Python, Perl, C, C++, Ruby on Rails, HTML, CSS, PHP, Version Control, Various IDEs, Distributed Systems Design, Photoshop, Illustrator

TEACHING

UNIVERSITY OF EDINBURGH | DEMONSTRATOR FOR IJP

Fall 2017 and Fall 2018

- Ran the distance version of the Introduction to Java Programming course

UNIVERSITY OF EDINBURGH | SUTTON TRUST

Summer 2018 and Summer 2019

- Helped run a workshop encouraging high school students to pursue Informatics research

UNIVERSITY OF EDINBURGH | TA FOR MASTERS PROJECTS

Summer 2017

- Helped supervise the software engineering thesis projects for six masters students

PUBLICATIONS

Erika Szymanski and Emily Scher (joint first authors), Models for DNA Design Tools: The Trouble with Metaphors Is That They Don't Go Away. ACS Synthetic Biology (2019). doi.org/10.1021/acssynbio.9b00302

Emily Scher, Shay B Cohen, Guido Sanguinetti, PartCrafter: Find, Generate, and Analyze BioParts. Synthetic Biology (2019). doi:10.1093/synbio/ysz014

Yisha Luo, Yue Shen, Emily Scher, Junbiao Dai, Yizhi Cai, YeastFabCAM: Computer Assisted Manufacturing for constructing large-scale genetic parts registries, 7th International Workshop on Bio-Design Automation, August 2015

Emily Scher, Yisha Luo, Aaron Berliner, Jackie Quinn, Carlos Olguin, Yizhi Cai, GenomeCarver: harvesting genetic parts from genomes to support biological design automation, 6th International Workshop on Bio-Design Automation, June 2014

Giovanni Stracquadanio, Kun Yang, Emily Scher, Joel S. Bader (2013). BioPartsApps: Design and Tracking Tools for Synthetic Biology. DARPA Clio Meeting. Atlanta, GA, USA. April 22-24, 2013.

Robert Gormley, Emily Scher, Malabi Venkatesan, Ryan Ranallo. Towards a Reverse-Vaccinology of the Shigella Pan-Genome. Keystone Symposia: Immunological Mechanisms of Vaccination, October 2010