

JONATHAN KING

Education

Carnegie Mellon - University of Pittsburgh
Joint PhD Program in Computational Biology
Prof. David Koes, Advisor

Expected 2022

University of California, Berkeley
B.A. Computer Science, B.S. Bioengineering
3.4 Cumulative GPA

May 2017

tel 510.856.7311
email jok120@pitt.edu
web jonathanking.github.io

Skills and Coursework

- Python, Bash, C, Java, SQL, Spark, R
- Algorithms for Computational Biology
- Operating Systems, Data Structures, Database Theory, Networking
- Machine Learning, Discrete Math, Probability Theory, Linear Algebra
- Biophysical Chemistry
- Molecular Biology

Research Experience

Graduate Student Researcher, Koes Lab

Aug 2017 - Present

Carnegie Mellon - University of Pittsburgh

- Developed novel machine learning methods for protein structure prediction based on sequence to sequence models.
- Sunseri, J., **King, J.E.**, Francoeur, P.G. et al. J Comput Aided Mol Des (2018). "Convolutional neural network scoring and minimization in the D3R 2017 community challenge" <https://doi.org/10.1007/s10822-018-0133-y>.

Research Assistant, Hu Lab

Dec 2016 - Aug 2017

UCSF Dept. of Physiological Nursing, San Francisco CA

- Expanded Xiao Hu et al.'s SuperAlarm project to combat alarm fatigue in hospital settings.
- Implemented Deep Learning methods in Python for the prediction of "code blue" events from hospital alarm data.
- Ran Xiao, **Jonathan King**, Andrea Villaroman, Duc H. Do, Noel G. Boyle and Xiao Hu, Senior Member, IEEE . "Predict In-Hospital Code Blue Events using Monitor Alarms through Deep Learning Approach". IEEE EMBC 2018.

Bioinformatics Intern

May 2015 - Dec 2016

Plexxikon Inc., Berkeley CA (contracted through Lab Support)

- Developed novel algorithms to detect structural variants in patients with acute myeloid leukemia (AML). Publication pending.
- Improved specificity and reporting methods of algorithms to compete with existing software.
- Utilized Illumina's BaseSpace cloud computing platform to run application remotely with Amazon Web Services.
- Engineered scripts for parallel analysis of other biological experiments using Next Generation Sequencing data.

Research Assistant, Zilberman Lab

Apr 2014 - Sep 2014

University of California, Berkeley

- Studied epigenetic role of DNA methylation in the Arabidopsis plant.
- Screened 200+ plants for genetic mutations through PCR / gel electrophoresis.
- Performed computational analysis of next-gen sequencing data for traits in 5 genes.

Software Engineering Experience

High-Frequency Bitcoin Trading Application

Manages user balance by intelligently buying and selling Bitcoin currency on several markets.

- Implemented web scraping methods for determining market sentiment via Google News and Twitter feeds.

Notable Projects:

- Complete Sequence to Structure Prediction of Proteins via Neural Machine Translation
- Prediction of RNA Secondary Structure via Neural Machine Translation
- An Agent-Based Approach to Modeling Ebola Outbreak

Other Work Experience

Tutor - Computer Science, Math, Chemistry, Physics

Dec 2014 - Present

InstaEdu.com, Online Tutoring Service

- Coached over 30 high school and college students in STEM curriculum.
- Developed weekly lesson plans for video conferencing students.

Leadership and Activities

Berkeley Biomedical Engineering Society

2013 - 2017

- Collaborated with Academic committee to plan monthly events for the Bioengineering community.
- Organized and participated in research fair, professor socials, career exploration.

Awards and Recognition

Best Talk, Northern California Computational Biology Student Symposium

Oct 2016

"A Novel Algorithm for Detecting FLT3 Internal Tandem Duplications in Patients With Acute Myeloid Leukemia"

- Competed against graduate students from UCSF, UCSC, UCSB, and Stanford.

Other Awards

3 "Silver Key" Scholastic Art Awards for Photography | "Best Picture" Award Wikimedia National Photo Competition