Parker Knight

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Education

B.A. in Mathematics, University of Florida, Gainesville, FL
Expected Graduation: Fall 2020
GPA: 3.98 (4.0 Major)

Experience

Research Assistant

Bacher Group, UF Department of Biostatistics, Gainesville, FL   Aug. 2019 - Present

- Designed algorithms and software for efficient visualizations of DNA methylation data
- Analyzed single-cell RNA-seq data and presented results with scientific figures

Research Intern

Fred Hutchinson Cancer Research Center, Seattle, WA   June 2019 - Aug. 2019

- Analyzed diverse *omics* data sets and presented results to lead statisticians and Principal Investigators
- Developed an R package for optimizing high dimensional, doubly-structured regression models

Software Engineer Intern

ITProTV, Gainesville, FL   May 2018 - Aug. 2018

- Developed REST API endpoints used across a microservice architecture
- Wrote front-end features used directly in customer-facing products
- Collaborated with team members, including participation in sprint planning sessions and pair programming

Research Assistant

Febo Lab, McKnight Brain Institute, Gainesville, FL   April 2018 - April 2019

- Designed and developed audio processing pipeline for analysis of animal vocalizations, including filtering and feature extraction
- Executed machine learning classification of complex audio data to study the behavioral effects of drug treatments
- Processed resting state fMRI images for use in functional connectivity studies

Research Programmer

Digital Worlds Institute, University of Florida, Gainesville, FL Jan. 2018 - April 2019

- Built visual learning games with WebVR technologies
- Practiced remote development techniques with Git and weekly video calls

Research Assistant

Bruijnzeel Lab, McKnight Brain Institute, Gainesville, FL   Sept. 2016 - April 2019

- Planned and executed behavioral neuroscience experiments, including Large Open Field, Elevated Plus Maze, and Novel Object Recognition tests
- Analyzed behavioral data using clustering methods and hypothesis testing
- Communicated results to Principal Investigators, through visualizations, formal reports, and presentations

Involvement

Learning Assistant

Dept. of Mathematics, University of Florida, Gainesville, FL   Aug. 2018 - April 2019
- Lead group discussion of course material with undergraduate students
- Assisted students with homework and classwork
- Courses taught: Analytical Geometry and Calculus 1, Analytical Geometry and Calculus 2

Executive Board Member

Center for Undergraduate Research Board of Students, University of Florida, Gainesville, FL   May 2018 - April 2019
- Coordinated and led production of video content to promote research-related events
- Met with faculty and other board members to manage the Center's website content

Peer Advisor

Center for Undergraduate Research Board of Students, University of Florida, Gainesville, FL   August 2017 - May 2018
- Held office hours twice weekly to provide assistance to undergraduate students in finding research opportunities on campus
- Advised students in enhancing their research experience through scholarships and presentations

Publications

- Chellian R, Wilson R, Polmann M, Knight P, Behnood-Rod A, Bruijnzeel AW. Evaluation of Sex Differences in the Elasticity of Demand for Nicotine and Food in Rats. Nicotine Tobacco Research, 2019 Sep 6.

- Tan S, Xue S, Behnood-Rod A, Chellian R, Wilson R, Knight P, Panunzio S, Lyons H, Febo M, Bruijnzeel AW. Sex differences in the reward deficit and somatic signs associated with precipitated nicotine withdrawal in rats. Neuropharmacology, 2019 Sep 2.

- Bruijnzeel AW, Knight P, Panunzio S, Xue S, Bruner MM, Wall SC, Pompilus M, Febo M, Setlow B. Effects in rats of adolescent exposure to cannabis smoke or THC on emotional behavior and cognitive function in adulthood. Psychopharmacology, 2019 Sep.

Presentations

- "Estimation and inference for high dimensional, doubly-structured regression models"
  Fall Undergraduate Research Symposium, Gainesville, FL   October 2019

- "Virtual Reality-based Learning Games for Computer Science Education"
  Spring Undergraduate Research Symposium, Gainesville, FL   April 2019

- "Sex Differences in Rodent Behavior: a Hierarchical Clustering Analysis"
  UF College of Medicine Poster Session, Gainesville, FL   February 2019

- "Machine Learning Classification of Ultrasonic Animal Vocalizations"
  Fall Undergraduate Research Symposium, Gainesville, FL   November 2018

- "Adolescent Cannabis Smoke Exposure Does Not Affect Anxiety or Depressive-like Behavior in Male and Female Rats in Adulthood"

Center for Addiction Research and Education Spring Symposium, Gainesville, FL   April 2018

- "Long Term Behavioral Effects of Cannabis Smoke in Rats"
  Fall Undergraduate Research Symposium, Gainesville, FL   November 2017

Honors and Awards

Honorable Mention in COMAP's Mathematical Contest in Modeling	2020
Cold Spring Harbor Laboratory Undergraduate Research Program (Declined)	2019
Fred Hutchinson Summer Undergraduate Research Program ($4750)	2019
College of Liberal Arts and Sciences Dean's List	All Semesters
Anderson Scholar with High Distinction	2018
University Scholars Research Scholarship ($1750)	2018
University Scholars Research Scholarship ($1750)	2017
Student Honors Organization	2016

Skills

Languages:	R, Python, Haskell, C++, JavaScript
Software:	Linux, Git, Docker, SQLite

Additional projects available on Github, or by request.