john.kevin.cava@gmail.com **_John Kevin Lopez Cava_** Website: johncava.github.io

Education

Arizona State University, Tempe AZ — Aug 2020 - Present
Ira Fulton Schools of Engineering: *PhD, Computer Science*

Arizona State University, Tempe AZ — ***GPA: 3.22***
Ira Fulton Schools of Engineering: *Bachelors of Science, Computer Science*
College of Liberal Arts and Sciences: *Bachelors of Science, Molecular Biosciences & Biotechnology*
Bachelors of Science, Mathematics
Graduation Date: May 2018

Research Experience

Arizona State University, Tempe AZ — ***August 2021 - Present***
Graduate Research, Biodesign Center for Applied Structural Biology, Advisor: Ross Maciejewski & Abhishek Singharoy
- Design and construct deep learning models to generate new structures in molecular protein dynamics

Arizona State University, Tempe AZ — ***January 2020 - August 2021***
Graduate Research, Advisor: Lalitha Sankar
- Conduct deep learning experiments on state of the art robust loss functions and α-loss

Arizona State University, Tempe AZ — ***August 2018 – Dec 2019***
Graduate Research, Efficient Vehicles & Sustainable Transportation
- Collected and Aligned LiDAR and Camera data
  - ~ 30 hours of pedestrian LiDAR Data
  - ~ 2.5 hours of aligned LiDAR and varying focal length camera data
- Designed and developed deep learning models for distance estimation from camera data

Arizona State University, Tempe AZ — ***August 2017 – May 2018***
Undergraduate Research Assistant/ Graduate Research, Biodesign
- Handling with Terabytes of Microbe Data for Network Analysis
- Utilize programs and programming to analyze data within ASU Research Computing Cluster (Saguaro)

Work Experience

American Express, Deer Valley AZ — ***June 2017 – August 2017***
Software Engineer III Intern, ITSM Suite Development & Integration
- Designed, Implemented, and Documented ITSM API endpoints within Apigee for Internal American Express Customers (Departments)
- Tested API endpoints through SoapUI and Postman
- Developed basic MEAN stack applications and hosted them in American Express servers

American Express, Desert Ridge AZ — ***June 2016 – August 2016***
Software Engineer III Intern, Employee and Communications Technology
- Designed and implemented a web application that retrieves relationships from a graph database (Neo4j) and visualizes said relationships within a graphical user interface (Javascript and AngularJS Framework)
- Implemented a Java program that imports American Express' data about its internal applications and technologies into a graph database.

Skills

Languages: Python, Java, Javascript
Libraries: pyTorch, pyTorch-geometric, numpy, sci-kit learn, matplotlib, pandas

Related Experiences

Arizona State University, Tempe AZ — ***August 2017 – December 2017***
Undergraduate TA, CSE 471 Introduction to Artificial Intelligence
- Undergraduate TA for a class that I took during Sophomore year of University.
- Holding office hours and answer questions in online forums to help AI projects which are done in python

Publications and Preprints

- Sypherd, Tyler, Mario Diaz, ***John Kevin Cava***, Gautam Dasarathy, Peter Kairouz, and Lalitha Sankar. "A Tunable Loss Function for Robust Classification: Calibration, Landscape, and Generalization." *arXiv preprint arXiv:1906.02314* (2019).
- Gupta, Chitrak, ***John Kevin Cava***, Daipayan Sarkar, Eric A. Wilson, John Vant, Steven Murray, Abhishek Singharoy, and Shubhra Kanti Karmaker. "Mind reading of the proteins: Deep-learning to forecast molecular dynamics." *bioRxiv* (2020).
- ***John Kevin Cava***, Todd Houghton, Hongbin Yu. Towards Generalizable Distance Estimation By Leveraging Graph Information. *Proceedings of the IEEE International Conference on Computer Vision Workshops 2019*.
- ***John Kevin Cava***, Gaoyang Li, Wei Du, Huansheng Cao. WITOD: A Tool for Within-Taxon Operational Taxonomic Unit Diversity Analysis. *bioRxiv, 813444*