

## Education

- **University of California, San Diego** GPA: 3.60 / 4.00  
*B.S. in Computer Science* Jun. 2020 – Dec. 2022
  - **Provost's Honors**: Awarded to undergraduate students based on academic excellence
  - **Coursework**: Advanced Data Structures (IP), Statistical Methods (IP), Introduction to CS Research (A)
- **Grossmont College** GPA: 3.99 / 4.00  
*A.S. in Computer Science, Mathematics, and Physics* Aug. 2018 – May 2020

## Research Experience

- **Advanced Robotics and Control Lab, UC San Diego ECE Department** Jan. 2021 – Present  
*Robotics Researcher (Advisor: Prof. Michael Yip)*
  - Developing a **Suturing Simulation** for Surgical Robotics
  - Implementing a **Position Based Dynamics** solver in **Python** and **C++** for simulating human tissue
  - Training a robotic handle how to suture human tissue using **reinforcement learning** techniques
- **Berg Lab, UC San Diego CSE Department** Oct. 2020 – Present  
*Computer Vision Researcher (Advisor: Prof. Taylor Berg-Kirkpatrick)*
  - **1 of 48** students chosen to participate in the CSE Early Research Scholars Program at UCSD
  - Earned **highest grade out of 14 research groups** on Group Research Proposal
  - Optimized OCR pipeline for historical document transcription through use of **deep neural networks** and **local search algorithms**
  - Implemented deep convolutional neural models in **PyTorch** with **OpenCV**
- **Mesirov Lab, UC San Diego School of Medicine** Jun. 2020 – Present  
*Bioinformatics Researcher (Advisor: Prof. Jill P. Mesirov)*
  - Developed software modules in **R** for GenePattern, a platform for reproducible bioinformatics used by **500,000+** users worldwide
  - Applied **machine learning algorithms**, such as **PCA** and **UMAP**, to functional data derived from patient **cancer tumors**
  - Built and tested GenePattern modules using **Bash scripts** and **Docker** containers
  - Conducting experiments on **scRNA-seq cancer data** from The Human Cell Atlas with **Seurat** modules I built for GenePattern
- **Google ExploreCSR, UC San Diego CSE Department** Jan. 2020 – Aug. 2020  
*Machine Learning Researcher*
  - **1 of 26** community college students chosen to participate in the **Google Explore Computer Science Research** Program at UCSD
  - Conducted **epileptic seizure detection analysis** on EEG data in **Python**
  - Used **scikit-learn**, **NumPy**, **Matplotlib**, and **pandas** to implement and visualize logistic regression predictions in Jupyter Notebook

## Work Experience

- **Computer Science & Information Systems Open Lab, Grossmont College** Aug. 2019 – Present  
*Computer Science Tutor*
  - Assisted students in **all core lower-division CS courses**
  - **Courses**: Data Structures in Java and C++, Systems Programming, Python, SQL, Programming Logic, and Discrete Structures
- **ACM AI, Association for Computing Machinery at UC San Diego** Oct. 2020 – Present  
*Director of Marketing*
  - Connected **360+** members of AI-focused student organization to AI workshops, research talks, and competitions
  - Coordinated marketing and sponsorship staff in spearheading outreach campaigns to **1400+** ACM members and industry alumni

## Projects

- **Seurat.BatchCorrection Module**: Implements the Seurat v3 batch-correction algorithm for use on single-cell gene expression datasets
  - In process of being published to **F1000 Research Journal** (Early 2021)
  - Presented at **Broad Institute of MIT and Harvard's Scientific Retreat** (December 2020)
- **iOS Apps**: Developed a *Twitter Clone*, *Instagram Clone*, *Flixster Clone*, and *cookr* as a part of UCSD's CodePath iOS Bootcamp
  - Used **APIs** (Twitter API, Parse API, Movie Database API) for app-specific features and data storage/retrieval
  - Integrated **CocoaPods** (AlamoFireImage, MessageInputBar, AFNetworking, BDBOAuth1Manager) into apps for scalable features
  - Implemented **View Controllers** (Table View, Feed View, Profile View, Camera View) and **Navigation Controllers**

## Skills

- **Technical Languages**: Python, R, SQL, C++, Java, Matlab, Swift, JavaScript,  $\text{\LaTeX}$
- **Spoken Languages**: Spanish (Native), English (Native)
- **Technologies**: PyTorch, OpenCV, Tensorflow, Keras, scikit-learn, NumPy, pandas, Matplotlib, Blender, Docker, Git, Bash, Unix/Linux