Jonathan Zamora

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#### Education

# University of California, San Diego

B.S. in Computer Science Jun. 2020 - Dec. 2022

o Provost's Honors: Awarded to undergraduate students based on academic excellence

o Coursework: Advanced Data Structures (IP), Statistical Methods (IP), Introduction to CS Research (A)

**Grossmont College** A.S. in Computer Science, Mathematics, and Physics

GPA: 3.99 / 4.00 Aug. 2018 - May 2020

GPA: 3.60 / 4.00

## Research Experience

### Berg Lab, UC San Diego CSE Department

Computer Vision Researcher (Advisor: Prof. Taylor Berg-Kirkpatrick)

Oct. 2020 - Present

- o 1 of 48 students chosen to participate in the CSE Early Research Scholars Program at UCSD
- o 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- Optimized OCR pipeline for historical document transcription through use of deep neural networks and local search algorithms
- o Implemented deep convolutional neural models in PyTorch with OpenCV

## Mesirov Lab, UC San Diego School of Medicine

Bioinformatics Researcher (Advisor: Prof. Jill P. Mesirov)

Jun. 2020 - Present

- o Developed software modules in R for GenePattern, a platform for reproducible bioinformatics used by 500,000+ users worldwide
- o Applied machine learning algorithms, such as PCA and UMAP, to functional data derived from patient cancer tumors
- o 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

Machine Learning Researcher

Jan. 2020 - Aug. 2020

- o 1 of 26 community college students chosen to participate in the Google Explore Computer Science Research Program at UCSD
- o Conducted epileptic seizure detection analysis on EEG data in Python
- o 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

Computer Science Tutor

Aug. 2019 - Present

- Assisted students in all core lower-division CS courses
- o Courses: Data Structures in Java and C++, Systems Programming, Python, SQL, Programming Logic, and Discrete Structures

## ACM AI, Assocation for Computing Machinery at UC San Diego

Oct. 2020 - Present

- o Connected 360+ members of Al-focused student organization to Al workshops, research talks, and competitions
- o 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
  - o In process of being published to **F1000 Research Journal** (Early 2021)
  - o 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
  - o Integrated CocoaPods (AlamoFireImage, MessageInputBar, AFNetworking, BDBOAuth1Manager) into apps for scalable features
  - o Implemented View Controllers (Table View, Feed View, Profile View, Camera View) and Navigation Controllers

# Skills

- Technical Languages: Python, R, SQL, C++, Java, Swift, JavaScript, LATEX
- Spoken Languages: Spanish (Native), English (Native)
- Technologies: PyTorch, OpenCV, Tensorflow, Keras, scikit-learn, NumPy, pandas, Matplotlib, Docker, Git, Bash, Unix/Linux