Jonathan Zamora

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Education

- **University of California, San Diego** — San Diego, CA
  B.S. in Computer Science; GPA: 3.566 / 4.00 — *Jun. 2020 – Present*
  - **Undergraduate Coursework**: Introduction to Python (A+), Teaching Computational Thinking for Everyone (A+), Discrete Mathematics (B-)
- **Grossmont College** — San Diego, CA
  A.S. in Computer Science, Mathematics, and Physics; GPA: 3.988 / 4.00 — *Aug. 2018 – May 2020*
  - **Undergraduate Coursework**: Intermediate Java and Data Structures (A), Intermediate C++ Programming (A+), Assembly Language & Machine Architecture (A), Discrete Structures (A), Intro to SQL (A+), Multivariable Calculus (A), Linear Algebra (A), Modern Physics (A+)

Research and Work Experience

- **Mesirov Lab, UC San Diego School of Medicine** — San Diego, CA
  Bioinformatics Intern — *Jun. 2020 – Present*
  - **Cancer Genomics**: My work in the Mesirov Lab is guided by performing Single-Cell RNA-Sequencing analyses on various cancer genomics datasets and encapsulating these analyses in the form of GenePattern Modules.
  - **GenePattern & Seurat**: I am developing Seurat Modules for the GenePattern environment [an open-source software package for genomic research] to provide our users with access to Seurat's Quality Control and Genomic Analysis tools.
  - **Machine Learning**: I have developed R Scripts that utilize PCA (Principal Component Analysis) for cell clustering and UMAP (Uniform Manifold Approximation and Projection) for dimension reduction of single-cell cancer data.
  - **Docker, Bash, & GenePattern Modules**: I have also written Bash Scripts that communicate with GenePattern Docker Containers for local testing of GenePattern Modules.
- **Early Research Scholars Program, UC San Diego CSE Department** — San Diego, CA
  Computer Vision Researcher — *Oct. 2020 – Present*
  - **Incoming CS Researcher**: Beginning Fall Quarter 2020, I will work with a group of students and faculty to contribute to a year-long computer science research project and present my findings at the end of the academic year at a research symposium.
- **CodePath, UC San Diego** — San Diego, CA
  iOS Developer Course Participant — *Oct. 2020 – Present*
  - **Incoming iOS student**: Also beginning Fall Quarter 2020, I will learn about iOS development through a project-based iOS course that culminates in a group project competition.
- **Computer Science & Information Systems Open Lab, Grossmont College** — San Diego, CA
  Computer Science Tutor [Level 2] — *Aug. 2019 – Present*
  - **Computer Science Topics**: I assist students in all core lower-division CS courses including Data Structures in Java, Data Structures in C++, Assembly Language & Machine Architecture, Python, SQL, Programming Logic, and Discrete Structures
  - **Information Systems Topics**: I also assist students in courses that cover Microsoft Office and Linux
- **Google ExploreCSR, UC San Diego CSE Department** — San Diego, CA
  Machine Learning Researcher — *Jan. 2020 – Aug. 2020*
  - **Epileptic Seizure Detection**: I worked with a CSE Ph.D. student at UC San Diego to understand the mathematical underpinnings of logistic regression and gradient descent to perform a seizure-detection analysis on EEG data.
  - **Python, NumPy, Matplotlib, and Pandas**: I utilized Scientific Python libraries to perform the epileptic seizure detection analysis in a Jupyter Notebook.

Projects

- **Batch Correction Processing Module**: Open source R module in GenePattern environment for quality control of Cancer data
- **Chess AI**: C++ chess game that utilizes Minimax algorithm for Opponent AI with 3 difficulty levels

Awards

- **2-Time Top 10 National Champion, Future Business Leaders of America**: 5th in Database Design & Applications (2018) and 8th in Computer Applications (2017)
- **2-Time California State Champion, Future Business Leaders of America**: Database Design and Applications (2018) and Spreadsheet Applications (2018)

Programming Skills

- **Technical Languages**: Python, C++, Java, SQL, R, Swift, LaTeX
- **Spoken Languages**: Spanish (Native), English (Native)
- **Technologies**: PyTorch, Tensorflow, Keras, Docker, ROS