

DAVID WEBER

• Phone: 1 909 809 7207 • Email: itsdavidweber@gmail.com • GitHub: www.github.com/dwebe003 • Portfolio: www.colouredavid.com

EDUCATION

University of California, Riverside – June 2018

- **B.S. in Pure Mathematics**, GPA: 3.59/4.00 Honors: Dean's List, Putnam Math competitor
 - Related coursework: Linear Algebra, Geometry, Graph Theory, Combinatorics, Topology
- **B.S. in Computer Science**, GPA: 3.64/4.00 Honors: Dean's List, multiple Hackathon participator
 - Related coursework: Numerical Analysis, Advanced Data Structures & Algorithms, Computer Graphics

RELATED EXPERIENCE

Freelance App Development – Software Engineer [March 2020 – present]

- Used my time in the quarantine to create a profiting photo-editing iOS app named 'Priszm' that uses geometry and trigonometry to manipulate a user's photo in order to create abstract art. [[App Store link to Priszm](#)]
- Currently designing a social-media integrated and visually aesthetic "Bucket List" app for iOS and Android, coded with C# and SQLite under a Xamarin framework.

Orange Logic – Software Engineer [Sept 2019 – March 2020]

- Developed test-driven features in C# with strong links to SQL for 'Cortex,' the engine behind the company's Digital Asset Management (DAM) platform.
- Designed executable applications using VS Windows Forms, one such that cleans log files of sensitive data by use of Regex.
- Improved methods of importing Orange Logic proprietary 'Parameters' to the appropriate databases by a factor of 60-100 at the behest of Facebook, now capable of importing records at a rate of 20,000 per second.
- Accessed remote client servers and databases in order to debug reported issues and defects.
- Set up and configured AWS servers and front-end DAM websites for clients such as Blizzard Entertainment.

Anduril Industries – Software Engineering Intern [Oct 2018 – Feb 2019]

- Provided backend solutions in C++, Java, and Python to a defense startup specializing in autonomous towers and drones.
- Implemented Java methods in Anduril's dispatch server to compare two time-separated images, through protobuf communication and a custom gRPC Python server, and return a diff ratio by computing a normalized cross-correlation.
- Improved C++ methods of regression and error calculation between GPS tracks and Anduril TensorFlow generated tracks.
- Constructed an IMU (Inertial Measurement Unit) using an Arduino Nano and utilized Gyro/Accelerometer data to determine and correct the intensity of a swaying Anduril tower.
- Enhanced each tower's camera precision and calibration by using Powell's method to minimize the error function and establish an optimal virtual position of each tower.

TECHNICAL SKILLS

Programming Skills:

- C++, C#/.NET, Python (incl. Django and Flask), SQL, Java proficient, Protobuf w/ gRPC, OpenCV, OpenGL, JSON & XML
- Experienced in Object-oriented programming, multi-threaded programming, artificial intelligence, and algorithm design.
- Knowledgeable of various IDEs and developmental tools across Linux, macOS, and Windows operating systems.
- Well-versed in Test-Driven Development and Agile methodologies.

Mathematics Skills:

- Numerical Methods, Linear Algebra, Computational Geometry, Calculus (incl. ODE, multivariable), Topology, Graph Theory, Optimization, Combinatorics
- Linear Algebra strengths: OpenGL Graphics, Matrix transformations, Eigenvalues/Eigenvectors, Matrix Decomposition
- Numerical strengths: Quadrature techniques, Regression methods, Interpolation, Fourier Transformations

RELATED PERSONAL PROJECTS

Artificially Intelligent Puzzle Solver [[Video Demo](#)]

- Developed an artificially intelligent puzzle-solver that solves a scrambled 8-puzzle (n-capable) in a matter of milliseconds.
- Defined game operators and used the A* search algorithm with various heuristics for a time/memory comparison.

OpenGL Exploration [[GitHub links: ray tracing, pipeline, Bezier curves](#)]

- Constructed a lite version of the OpenGL ray tracing mechanisms (i.e. shading, refraction, reflection, lighting, shadows).
- Created a lite version of the OpenGL graphics pipeline (i.e. matrix transformations, image rasterization, color gradients).