

Alexander Dunn

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<https://github.com/adunn27>

EXPERIENCE

BugSwarm Research Project, at University of California, Davis

<http://www.bugswarm.org>

January 2021 - September 2021

- Worked under Dr. Cindy Rubio González as part of the team working on BugSwarm, a dataset of software bugs and their associated fixes made up of real-world examples, obtained by mining GitHub repositories that use Travis-CI.
- Debugged and created patches for Java projects in the dataset that break due to external dependencies.
- Improved the in-house bug classifier from being practically useless to an invaluable tool for the team's dataset maintenance efforts with a 97% accuracy rate.
- Created a new method and script to cache all dependencies of any Python project to improve its reproducibility without an internet connection and avoid future breakages.

EDUCATION

University of California, Davis — *Student*

September 2017 - Graduate June 2021

- B.S. in Computer Science
- GPA 3.89
- **Relevant Coursework:**
Software Engineering, Algorithm Design, Gameplay Programming, Artificial Intelligence, Computer Graphics, Operating Systems, Web Programming, Computer Vision, Computer Networking, Programming Language Design, Probabilistic Modeling, Computer Architecture, Computational Theory, Computational Linguistics, Psychology Agent-Based Modeling
- **Notable projects:**
 - In a group of 4 as a Capstone Project, created a real-time multiplayer top-down shooter web-game using NodeJS and WebSockets, written in TypeScript.
Link: <https://hexisle.io> and <https://github.com/o-chib/hexisle.io>
 - In a group of 5, created a first-person stealth horror game using the Unity3D engine and C#, with my focus on gameplay-programming and creating the enemy AI.
Link: <https://jeffk1m.itch.io/miasma>
 - Managed and led a group of 5 over 5 weeks that created a Time Tracking cross-platform mobile application in Java.
Link: <https://github.com/adunn27/A2Prj>
 - As part of a pair, created a user-space threading library in C with added semaphore and thread-protected storage functionality.
 - Wrote a 3D model renderer with shading based on the Phong lighting model and an attached CLI all from near-scratch, written in C++.
 - In a pair, made a content-aware image resizer written in MATLAB that resizes images without distorting important objects within the image.
 - Created a verifier (both syntactic and semantic), a parser, and an interpreter for a Datalog-like logic programming language, all written in Java.

SKILLS

Unity
Git
Unit Testing
Continuous Integration
Docker
NodeJS
Webpack
WebSocket
Google Cloud
Bash Command Line

PROGRAMMING LANGUAGES

C
C++
C#
Java
JavaScript
TypeScript
HTML + CSS
Bash Script
Python
MATLAB
CLisp
Lua