

Benjamin F. Wilson

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Education

M.S. - Computer Science, Oregon State University (OSU), Corvallis OR	2021
<ul style="list-style-type: none">• Focus: Programming Language Theory, Computer Graphics, AI• Thesis: Structuring Teachable Knowledge through Program-Concept Classifications	
B.S. - Computer Science, Oregon State University (OSU), Corvallis OR	2020
<ul style="list-style-type: none">• Cum Laude• Computer systems option• Wrote the educational domain specific language BoGL with capstone team	
Oregon State University, Corvallis OR	2012
<ul style="list-style-type: none">• Studied Mechanical Engineering	
San Marin HS, Novato CA	2011

Professional Experience

Research Assistant, Programming Languages Group, OSU	2020 - 2021
<ul style="list-style-type: none">• Worked under Professor Martin Erwig• Researched classification and ordering systems for guiding the presentation of programming examples• Worked on the educational programming language BoGL, written in Haskell, for students• Engineered OSU's BoGL stack on an EC2 instance, maintaining 24/7 uptime• Researched educational impacts of teaching BoGL to students• Led development for the Childsplay research group showcase website	
Teaching Assistant, OSU	Sept. 2018 - June 2020
<ul style="list-style-type: none">• Teaching Assistant (ULA) working with Graduate Teaching Assistants and Instructors• Worked with students in introductory Computer Science courses• Ran labs and taught students about programming language concepts in C++ and Haskell• Graded assignments, provided office hours for teaching assistance, and ran late-night study sessions	
Core Contributor, Parse Community, Github	Jan. 2017 – June 2018
<ul style="list-style-type: none">• Oversaw maintenance & development of the Parse PHP SDK, connecting to the Parse BaaS• Greatly improved CI to boost coverage to > 90%, making the sdk the most covered repo at the time• Implemented automatic style enforcement as part of the CI• Implemented automatic documentation generation as part of the release process• Independently assisted contributors with code and reviewed pull requests• Discussed and provided enhancement for the primary server and all outlying SDKs• Initially worked with Facebook employees to migrate Parse to a community run organization	

Head Software Engineer, Axolsoft, Upland CA

Jan. 2015 - Sept. 2017

- Co-founded Axolsoft, a general software LLC, and ran day-to-day operations as a software engineer
- Developed CRM & administration portals for services and payments with PHP, SQL and Braintree
- Designed and built the axolsoft.com website
- Worked with organizations to plan and discuss project proposals, and to respond to questions
- Developed front-end customer websites, accompanied with logging system for JS errors
- Maintained DL 360 & DL 380 Proliant servers running Ubuntu as part of network infrastructure
- Engineered emailing system with a PHP sdk for composing and sending HTML5 emails with DKIM
- Created MySQL database abstraction (server and sdk), used to manage Axolsoft and customer data
- Built Steinwise beer suggestion & discovery RESTful API with PHP, SQL and an iOS app

Co-President, OSU App Club

2014 - 2015

- Co-developed a popular Android app, 'Corvallis Transit', for tracking buses in Corvallis, OR
- Taught iOS and Android development (Obj-C and Java) to OSU students
- Helped run a hackathon alongside Google engineers
- Reviewed and helped students individually with their Android and iOS projects

Software Engineer (Contract), Score Savers Test Prep

2013 - 2017

- Developed student & account management tools for Score Savers Prep with Parse server and Javascript
- Built Android/iOS student testing app for Score Savers, with SQLite/CoreData and MySQL/PHP
- Was retained for several years to continue system development & maintenance

Independent Software Development

2013 - Current

- Wrote 'Banter', a tool in C/OpenGL for performing 3D structure-agnostic data visualization of files
- Created 'Latria', a small cross-platform scripting language in ANSI-C to interpolate language values
- Released 'Hangman Azul', a multiplayer Android hangman game using Bluetooth and OpenGL
- Built Android app 'RentChecker' with Google spreadsheet APIs to automate calculation of rent
- Released 'Bit Shooter', a Galaga-style game natively built for iOS and Android

Scholarship

M.S. Virtual Visit Speaker, OSU

2021

- Volunteer speaker at the first M.S. Virtual Visit for prospective graduate students

VLHCC Conference Paper Co-Reviewer

2021

- Used web engineering expertise to assist PhD student with review of VLHCC 2021 paper

Invited Participant - Portland Connect

2019

- One of 20 undergraduates invited to showcase OSU's top undergraduates

Grant Participation

2021

- Perham-Mocello, J., Erwig, M. , & Niess, M. (9/1/2019 – 8/31/2022). Child's Play: Learning Computer Science Through Tabletop Games, National Science Foundation, Award No. 1923628, \$1,000,000
 - Researcher and developer for the BoGL language and subsequent curriculum

Papers

- Benjamin Friedman Wilson, Martin Erwig, and Jennifer Parham-Mocello. *"A tool for scaffolding the teaching of programming concepts"*. draft, submitted for publication in VLHCC, 2021.
- Jennifer Parham-Mocello, Martin Erwig, Margaret Niess, Chris Kawell, and Benjamin Friedman Wilson. *"Virtually unplugged: Using board games for online cs middle school camps"*. draft, submitted for publication, 2021.

Ongoing Work/Research

- Exploring 802.11n (WiFi 4) implementation fundamentals
- Working on the Functional Domain Specific Shader Language (FDSSL) with a colleague at OSU
- Researching process visualization for software, making execution & memory layout visually apparent

Interests

- Bouldering and Top Roping (first certified to belay in 2018)
- Creating fascinating images with graphics, particularly with shaders and for data visualization
- Disassembling, repairing, and building electronic and mechanical devices (tinkering)
- Striving to make the perfect pizza from scratch

Skills

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| • Haskell, C++, C, PHP, Bash, Java, Python | • Leadership: Project & Team Management |
| • SQL, MySQL & MongoDB management | • Computer Science Researching |
| • Web Dev: HTML5, CSS, JS, TypeScript | • Public Speaking & Presentation |
| • Full-stack application Design & Development | • Git, Github, AWS, \LaTeX |
| • Software Verification, Testing, CI/CD | • Data Visualization with OpenGL(ES)/GLSL |
| • Servers, Networking, DNS | • Programming Language Design |