

Mark Winter

Seattle, Washington | 929-665-7805 | markwinter01@gmail.com | [linkedin.com/in/mark-winter/](https://www.linkedin.com/in/mark-winter/) | [markwinter1.github.io](https://github.com/markwinter1)
Software programmer and mathematician who enjoys puzzling over complex problems, learning and applying new skills, and working in close-knit teams.

EDUCATION

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- University of St. Andrews** | Master of Arts (Honours) in Mathematics | *Scotland, UK* *Sep 2019 - Jun 2024*
– **Dissertation:** A Walk along a Space-Filling Curve: Generating, Analysing, and Modeling Space-Filling Curves
– **Relevant Coursework:** Computational Numerical Analysis; Number Theory; Game Theory; Automata, Languages and Complexity; Topology; Real and Abstract Analysis
- Stuyvesant High School** | *New York City, NY* *Sep 2015 - Jun 2019*

WORK EXPERIENCE

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- Software Developer** | Skyscraper Foundry LLC. | *Remote; New York City, NY* *May 2022 - May 2024*
– Developed both front- and back-end for an AI-assisted predictive planning tool using PyTorch and JavaScript to suggest optimizations to property portfolios for global skyscraper developers.
– Analysed and compiled zoning data covering NYC's 120,000 zoning plots using R to present synthesis for architectural clients.
– Created and delivered detailed PowerPoint presentations and summary documents for clients of all levels.
- Bartender** | The Road Hole Bar at the Old Course Hotel | *Scotland, St. Andrews* *May 2021 - Sep 2021*
– Provided friendly customer service through the unique challenge of the 2022 British Open.
– Implemented alcohol-based solutions to customer needs by synthesizing unique taste profiles.
– Maintained a working hotel bar, managing stock and cleanliness to with internal and external regulations.
- Software Development Intern** | M. Arch Architects | *New York City, NY* *Jun 2019 - Aug 2019*
– Worked as a back-end software developer the small architecture firm M. Arch Architects to assist in the development of Zoner, the revolutionary new zoning application.
– Programmed and refined throughout the entire development cycle using Ruby on Rails.
– Gathered, parsed, and interpreted both public and private databases for information on over one hundred thousand zoning plots to build and inform the application.
- Volunteer Boatbuilder** | Village Community Boathouse | *New York City, NY* *Jan 2017 - Aug 2024*
– Used common woodworking machines including bandsaws, lathes, and drill presses alongside various hand tools, to craft three rowboats for communal use, Zoë, Cormorant, and David T. Heim.
– Engaged with design nuances and engineering constraints of boatbuilding by steaming wood, waterproofing, and ensuring optimal aquadynamic profile

PROJECT EXPERIENCE

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- Fishyphus of the Deep** | Sprodsoft *January 2023 - Present*
Expansion of Ludum Dare Game Jam 52 project. Worked as a full-stack developer on a team of 3 to create a three-dimensional physics-based golf-like collectathon.
– Learned and implemented tools such as Unity, Blender, and FLStudio, delivering high quality code to strict deadlines created to facilitate ongoing development.
– Identified interesting design concepts to create, iterate and polish an extensive game world informed by user feedback and game balance testing.
- Box of Squingus** | Sprodsoft *October 2023*
72-hour Ludum Dare Game Jam project. Worked as a full-stack developer on a team of 3 to create an innovative cooperative platformer game.
– Delivered back-end code, front-end game design, and art to rapidly assemble a platformer game, scoring 16th for innovation against over 1000 submissions.
– Spearheaded a rapid transition from Unity to Godot to accommodate changing project needs.
– Developed the unique control system which hugely influenced the final appearance of the game.
- ExploraVison National Science Competition Winner** *Jan 2017 - Jul 2017*
Researched and wrote a paper nationally recognized on the use of carbon nanospheres, a novel carbon formation for increased stability in quantum computation processes, earning a second place finish at the national level in the ExploraVison National Science Competition.

SKILLS

Programming : Proficient in C,, C#, Python, Ruby, C++, Java. Experience with Go, Haskell, Rust, Typescript.
Development Tools : Proficient with Git, Ruby on Rails, Godot, Unity, Agile development. Experience with Docker.
Web Development : Proficient in HTML, CSS, SQL, JavaScript. Experience with React, PHP.
Data Science : Proficient with NumPy, pandas, R, SciPy. Experience with PyTorch.
Other : Proficient with Blender, FLStudio. Proficient in euphonium, trumpet, trombone.
Languages : Fluent in English and Albanian. Proficient in Mandarin Chinese