

# Jonathan Munro

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## ABOUT ME

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Experienced software engineer skilled in C++ and multiple other programming languages, with a strong background in developing and maintaining code for financial portfolio management software. Recognised for academic excellence with First Class Honours degree in Mathematics with Computer Science. Actively engaged in personal and professional development, including coding challenges and full-stack web application development.

## EMPLOYMENT HISTORY

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### **Investortools, Inc. – Colorado Springs, Colorado, USA**

*(November 2021 – October 2022)*

Software Engineer II *(November 2021 – October 2022)*

- Developed high quality C++ code for fixed income portfolio management software.
- Maintained and updated a large codebase of over 3 million lines of C++ code - including legacy code, some written over 20 years ago.
- Frequently reviewed and helped to revise code written by around 10 other team members, as well as assisting in reviews for other departments.
- Demonstrated understanding of the US bond market to effectively serve the needs of large, high-worth clients.
- Led weekly team meetings to teach C++ concepts and supported team members in their learning and development.
- Participated in design discussions with senior software architects, and designed and specified tasks for newer team members.
- Trained 3 new hires in C++, and in our complex codebase, enabling them to become proficient in their roles.
- Lead presentations of projects I had been involved in to non-technical audiences and answered any questions they had.

### **Bondalytics, Ltd. – Glenrothes, Fife, Scotland**

*(June 2019 – November 2021)*

Software Engineer *(August 2019 – November 2021)*

- Developed and maintained high quality C++ code for fixed income portfolio management software.
- Modelled the complexities of various financial instruments to enable clients to perform fast and accurate calculations.
- Collaborated effectively with cross-functional teams from different departments.

Intern *(June 2019 – August 2019)*

- Led efforts to refactor an outdated data validation engine in C++ to improve efficiency and reduce the occurrence of bugs.
- Improved the speed of complex "option adjusted" financial calculations for adjustable rate mortgage backed securities.

## EDUCATION

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### **Heriot Watt University – Edinburgh, Scotland**

*(September 2016 – May 2020)*

Bachelor of Science in Mathematics with Computer Science with Honours of the First Class.

- Completed a university dissertation on number theory using Coq, a formal proof management system that allows for the creation of mathematical definitions, algorithms, and theorems, as well as the semi-interactive development of machine-checked proofs.

## **Bell Baxter High School – Cupar, Fife, Scotland**

*(August 2010 – June 2016)*

3 Advanced Highers and 6 Highers.

## **ACHIEVEMENTS**

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- Earned a promotion to Software Engineer II at Investortools, ahead of the usual promotion projection schedule.
- Recognized for academic excellence at university, including awards for exceptional merit and the Deputy Principal's award in my fourth year, as well as the university prize in my third year.
- Achieved the Saltire Award for volunteering efforts during high school.

## **SKILLS**

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### Leadership Skills:

- Demonstrated strong leadership skills through the organisation and facilitation of weekly meetings to discuss code progress, as well as the creation of dashboards to track team members' contributions towards weekly goals.
- Contributed to the education and development of younger students by serving as a teaching assistant in computer science classes at school.
- Demonstrated responsibility and leadership potential through various roles such as Prefect, Peer Counselor, House Representative, and Pupil Council Member at school.
- Exhibited leadership abilities by successfully managing the yearbook team during my final year of high school.

### Programming Skills:

- Skilled in various programming languages including C++ (main focus), JavaScript, C, Java, and Python.
- Experienced in working with large codebases, including 3+ million lines of C++ code.
- Proficient in learning new skills and technologies, and able to effectively work with code written by others as well as confidently write new code independently.
- Demonstrated ability to solve problems and improve team efficiency through the creation of Visual Studio extensions in C#.
- Currently developing a full-stack web application as a side project using technologies such as TypeScript, Node, Nest, Next, React, and Docker.
- Actively engaged in coding challenges, including "Advent of Code 2022" in JavaScript.

### Other Skills:

- Built a home media server using an old computer, Lubuntu operating system, and Jellyfin in a Docker container, to allow access to media files from any device in the house.

## **PERSONAL INTERESTS**

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- Passionate about staying up-to-date with emerging technologies, including computer hardware, smart-watches, phones, and virtual reality headsets.
- Continuously working to improve programming skills and learn new techniques and principles for use in personal projects.
- Experienced in graphic design, including creating presentations and promotional materials for a Christian publishing company, and a website for a local church.
- Interested in various topics in finance, including the stock market, and macro and micro economic principles.
- Actively involved in local church, as well as personal and collective Bible studies.