

THOMAS O'GARA

Software Engineer

@ thomasogara12@gmail.com

github.com/thomasogara

in linkedin.com/in/ogarathomas

EXPERIENCE

Software Development Engineer Intern

 - Amazon Web Services

 03/2021 - 08/2021  Dublin, Ireland (WFH)

- Worked on an agile team to develop an overhaul for an internal SAML-based Identity Provider.
- Primarily worked with **Java**, **TypeScript (Node.js)**, **React** and the **AWS SDK**.
- Developed **serverless applications** for deployment on **AWS (Lambda, ECS)**, using both **CloudFormation** and the **Cloud Development Kit**.
- Integrated solutions closely with durable, scalable cloud services such as **DynamoDB**, **SQS**, and **S3**.
- Designed, implemented, and tested a **React frontend** for the service. This involved researching UI/UX patterns, designing wireframes, and running feedback sessions with team members.
- Gained valuable exposure to **cryptographic theory (encryption, digital signatures, key wrapping)** and **technology (RSA, AES)** through developing solutions for integration with **AWS CloudHSM**.

STEP Intern

 - Google Cloud

 07/2020 - 09/2020  Dublin, Ireland (WFH)

- Worked on a 4-person agile team to develop an open-source web app, VINet.
- Primarily worked with **Java**, **JUnit**, **Mockito**, and **Google Cloud Platform**.
- Created and presented a design specification detailing the problem space and our proposed solution with a fellow intern.
- Developed a serverless backend for the web app with **App Engine** and **Javax Servlets**, using **Datastore** as the primary database.
- Implemented a performant scheduling and matching algorithm for the web app, based on the **Hopcroft-Karp bipartite matching algorithm**.
- Developed a navigable, accessible UI for the web app.

Bar Staff (Part Time)

 - NILBUD Inns Bar and Lounge

 06/2018 - 03/2020  Stoneybatter, Dublin 7

- Delivered high quality, friendly service to customers in a flexible, demanding work environment.

EDUCATION

B.Sc. Computer Science

University College Dublin

 2018 - 2022  First Class Honours (1.1)

- Relevant Modules
 - Data Structures & Algorithms, Object Oriented Programming, Statistics, Information Theory, Functional Programming, Spatial Data, Networking, Graph Theory, Big Data, Distributed Systems
- Dissertation
 - Examining the gender fairness of Recommender Systems and proposing methods of fairness enhancement. [Python, Cornac, Pandas, Numpy]
- Software Engineering
 - Worked in an agile team with 2 teammates to create a JavaFX Scrabble game. (Grade: A)
- Web Programming
 - Developed a mock cryptocurrency trading site. (Grade: A-) [Linux, Apache, MySQL, PHP]
 - Developed an e-commerce site with user accounts, sign-in, item tracking, and an administration portal. (Grade: A+) [Java, Spring, Mongo (DB), Bootstrap (CSS)]
- Databases and Information Systems
 - Developed a database system which advertised open employment opportunities, and tracked the staff hiring process, for a hospital. (Grade: A)

Leaving Certificate

Scoil Phobail Chúil Mhín

 2013 - 2018  613 points

TECHNICAL SKILLS

Java	Node (JavaScript)	AWS	Git	Linux	●●●
SQL	React	UI/UX	Docker		●●●
R	Python	LISP	Google Cloud		●●●

ACHIEVEMENTS

 Entrance Scholarship
University College Dublin - 2018

Awarded to incoming undergraduates who are deemed to have achieved academic excellence.

 Stefan Uzunov Memorial Award
Coolmine Community School - 2018

Awarded for achieving the highest leaving certificate results in a graduating year.

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PROJECTS

e-Commerce Site

[Java](#), [Spring](#), [HTTP Sessions](#), [Docker](#), [MySQL](#), [JavaScript](#), [HTML5](#), [CSS](#)


 January - March 2021

- Worked in an agile team with 2 teammates to create an e-Commerce site with user accounts, sign-in, stock tracking, and an administration portal. (Grade: A+)

VINet


[Java](#), [JavaScript](#), [HTML5](#), [CSS](#)



 July - Sept 2020

- Open Source Web App designed to allow those isolating as a result of CoViD-19 to get help from volunteers.
 -  VINet

Scrabble Game and Bot


[JavaFX](#)


 January - May 2020

- Graphical implementation of the popular board game Scrabble. (Grade: A)
 -  Scrabble
- Competitive Scrabble Bot, relying on a GADDAG-based word generation algorithm. (Grade: A+)
 -  Scrabble Bot

Algorithms Portfolio

[Java](#)


 January - May 2020

- CLI tool for executing and analysing the runtime of a number of algorithms for sorting, substring searching, compression etc.
 -  Algorithms

Data Structures Library

[Java](#)

 January - May 2020

- A library of performant implementations of a range of Data Structures including an ArrayList, Deque, Priority Queue, Heap, and an AVL Tree based Map.
 -  Data Structures

Igel Ärgern Game

[C](#)

 April - May 2019

- CLI implementation of the popular german board game Igel Ärgern.
 -  Igel Ärgern