Cathal O'Callaghan

3rd Year Computer Science and Information Technology Student

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Experience

Major League Hacking - Fellowship Intern (remote)
Python, Golang   **June - August 2020**

- Contributed full time to a range of open source projects within a group of students, under the mentorship of a software engineer.
- Gave technical support on issue boards and delivered general quality of life improvements to click (325,000 repositories dependant) and beego (used most notably by Huawei enterprise cloud).
- Pair programmed regularly with other students to reproduce bugs and researched specifications before adding new features.
- Implemented and documented custom logging format functionality on beego. This was an important addition in the major 2.0 release.
- Leveled up my git skills significantly through constant collaboration on open source projects while adhering to the many contributing standards set by project maintainers.

Personal Projects

News article web scraper   github.com/IamCathal/**NewsWebsiteScraping**
Python, Golang
Wrote a scraper to gather news articles from a handful of news websites daily for later data analysis. I plan on using this dataset as an intro to machine learning. Later refactored the script into golang which improved average runtime from 12 to 2 seconds.

ZipTab chrome extension   github.com/IamCathal/**zipTab**
Javascript
Developed a chrome extenson to manage online browsing workspaces. Ziptab saves a snapshot of all active tabs for later use and syncs data across all chrome browsers that a user is signed into.

Using an OCR to cheat memory tests   github.com/IamCathal/**HumanBenchMarkHelper**
Python
Combined Google's tesseract OCR and python for a script capable of insanely high scores on an online verbal memory test hosted by humanbenchmark. This script can beat any human in 20 seconds with 100% accuracy. Wrote a blog post on dev.to to teach beginners how to build the project.

College Projects

Real life based betting app   Awarded best overall group project
MongoDB, NodeJS, Go, Docker, React (MERN stack)   github.com/**ReqApp/Req**
My role: Project lead/back-end infrastructure/front-end UI

- Implemented complete user auth. and management system which included OAuth through Google, Github and Steam, password reset and email verification functionality. Passwords are checked against a database of common leaked passwords to ensure our users use secure passwords.
- Acted a scrum leader in our team's weekly sprints to coordinate our work, presented a demo of our project and liaised with our lecturer on the progression of the app.
- Dockerized and deployed to AWS and maintained the app to ensure performance and functionality had not been degraded at any point due to unscheduled downtime.
- Introduced and integrated continuous integration through TravisCI to monitor the build state of each iteration of the project. Wrote 90 unit tests to ensure a high standard of quality as the project grew in size which enabled us to catch feature breaking additions before being committed.
- Integrated Stripe for payments to allow users to purchase more coins on the app.
- Constructed an email service with golang using the Gmail API for email verification, password reset, purchase receipt and news-letter functionality. This service is also used by backend scripts to report failures in background tasks to the team to ensure they do not fail silently.

Achievements

Recognition at a Google algorithms workshop
After being accept based on my outstanding GitHub, I attended a Google algorithms workshop at their Dublin offices where we completed an algorithms worksheet. From this I was offered an interview for their summer STEP internship based on my performance.

3rd place in NUIG's hub for Google Hashcode 2020
My team of four 2nd year CS&IT students competed in Google's 2020 global hashcode programming competition and placed 3rd out of all teams competing in NUIG's hub.

First place hackathon project - MLH fellowship halfway hackathon
I came up with the idea of creating a portfolio generator for the work done during the MLH fellowship for future students and our team came first place in the best showcase/portfolio project category. MLH will use the project officially for all students in the future iterations of the fellowship. Powered by golang, graphql, nextjs and GCP.

First place software engineering group project
I lead a team of four students during the development of our web app Req, a real life based betting app. Our project took first place in the competition for best group project out of our class of 2nd year CS&IT students.

Education

BSc Computer Science & Information Technology
National University of Ireland Galway
September 2018 - June 2022 (Expected)

Achieved and maintaining a 1:1 grade level. A grades obtained in C, Object orientated programming, OOP: data structures and algorithms, web development, network & data communications, discrete mathematics, software engineering and database systems.

Skills

Languages
Golang, Python, Javascript, C, Java, CSS, HTML

Frameworks/tools
Git, Linux, Raspberry Pi, NodeJS, Docker, GraphQL, AWS, MySQL, MongoDB, Mux, Express

OS Contributions

I have contributed to many open source projects such as:
github.com/**poychang/github-dark-theme**
github.com/**commaai/comma10k**
github.com/**astaxie/beego**
github.com/**pallets/click**

Volunteering

NUIG Compsoc Ordinary Commitee Member
I was on the 2019/20 compsoc committee. I helped out with committee work and learned a bit about the operation and maintenance of our servers on the side.

Interests

Music
I am an avid techno fan. When not listening to techno I like to practice DJ'ing and occasionally upload my mixes online.

Drones
Have built two custom quadcopters since I gained interest in the hobby and love everything that comes with the constant maintenance and flying of them. I have learned more than I could've imagined from the electronics work that I've had to do after many crashes.