Medad Rufus Newman

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EXPERIENCE

Nationwide Building Society **London, UK**
Security Engineer *Aug 2024 - Present*

- I drove 2 successful campaigns in Nationwide to scan all the scannable code in the company with security tooling: Snyk, SonarQube and GitHub CodeQL
- In a span of 4 months, we got 97% of all 4500 code repositories scanned, up from 26% when we started. With the help of progress tracker dashboards, Pull Request Comments and fix guides, I worked with engineers across the company to incorporate the CI pipelines in their repositories to get the scanning results
- In the second campaign, I worked with engineers to agressively reduce the number of critical vulnerablities as discovered by the aforementioned tools. Over 90% drop in critical vulnerablities in Nationwide code bases since.
- I spoke at the London Security Engineering meetup(12/2/2026) sharing the strategies that worked - Leaderboards, progress tracker dashboards, using automation to check compliance, powerful use of familar colours, reducing the problem to a single metric.
- Besides the campaigns, I have done security assessments of the company mobile app and threat model reviews
- My toolset: Python and visualisation libraries

Dyson **Hullavington, UK**
Software Engineer *Feb 2022 - Aug 2024*

- Today, one can purchase 3 products in Dyson stores that run code that I wrote: The Dyson AirWrap ID - Hair styler, Dyson PencilVac & Dyson V16 Piston - Vacuum cleaners. These were products that incorporated Bluetooth connectivity for the first time.
- I contributed to the highly secure bluetooth embedded software connecting these products to the MyDyson mobile app running on Android and iOS devices. This allowed users to view stats about their gadget and update the firmware over the air.
- High reliablity was essential - I contributed to hardware in the loop rigs that tested functionality 1000s of times. I also contributed to a successful campaign to get ALL compiler warnings fixed, with all warnings turned on(`-Wall`, `-Wextra`)
- My toolset: C programming, Arm GCC Compiler, Behaviour Driven testing(BDD)

Ion-O Tech **London, UK**
Embedded Hardware/Software Engineer Intern *June 2021 - Sep 2021*

- Worked in a team to develop a high performance, innovative electric bicycle.
- Developed hardware and firmware(C++) for battery management, telemetry and wireless connectivity. Data visualisation with Grafana & InfluxDB.
- Designed and built battery packs, along with software for energy consumption prediction.

Onsee (formerly Pelation) **London, UK**
Design Engineer Intern *May 2020 - Sep 2020*

- I developed the first camera product for the company - a bicycle mounted dashcam for bicycles
- I did nearly everything - wrote the firmware, designed the CAD model, web backend, field visits.
- I followed through the first field trials for a customer in Oxford, troubleshooting where things did not work as expected.

EDUCATION

Imperial College London **London, UK**
Masters in Design Engineering, 2:1 *Sep. 2017 – June 2021*

- Thesis on predicting E-bike energy consumption with machine learning. Using: XGBoost, Pandas, NumPy, scikit-learn.
- Relevant Subjects: Mechanics, Electronics, Materials and Manufacturing, Data Structures & Algorithms, Optimisation, Robotics, Human-Centred Design, Industrial Design and Business Strategy.

Anglo Chinese School(Independent) **Singapore**
International Baccalaureate, 43 points(top 3%) *2015 – 2016*

- Maths internal assessment project on the Shamir Secret Sharing Scheme

TECHNICAL SKILLS

- **Languages:** Python, C, .NET/C#, Typescript, Javascript, Java
- **Databases:** MongoDB, InfluxDB, AWS DynamoDB
- **Visualisation tools:** Grafana, Seaborn, Plotly
- **Technologies/Frameworks:** Git, Docker, Cloudformation(AWS IaC), SciPy, NumPy, Pandas, React
- **Cloud:** AWS, Azure DevOps