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Timothy J Newman

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Education

Imperial College London — **United Kingdom** — **Oct 2020 – Jun 2024 (Expected)**

- **MEng in Electrical and Electronic Engineering** Year 1: 74.31% (top 20%), Year 2: 72.77% (top 20%)
- **Relevant Modules:** Analog Integrated Circuits, Digital Signal Processing, Electromagnetics, Programming for Engineers, Digital Electronics and Computer Architecture, Linear Algebra, Probability & Statistics, Machine Learning, Power Electronics, Optoelectronics

Anglo Chinese School (Independent) — **Singapore** — **Feb 2017 – Nov 2019**

- International Bacclaureate Diploma Program, 41/45 points overall, HL Math 7, HL Physics 7, HL Chemistry 7

Employment

Front-end Developer — **Bühler UK Ltd, London, United Kingdom** — **Jul 2022 – Sep 2022**

- Interned in the Data Analytics and Services team, focussing on Sortex optical sorting machines
- Developed desktop Graphical User Interface (GUI) using ElectronJS, ReactJS and TailwindUI for querying an internal data management platform and managing API key access
- Developed 2nd GUI for editing a configuration file using a dynamically generated form based on a JSON schema
- Setup CI/CD pipeline on Azure DevOps with test, build and publish stages to distribute application for user testing
- Presented applications to both technical and non-technical users to gain feedback which was then incorporated in later versions

Part-time Peer Tutor — **Imperial College London** — **Oct 2021 – Apr 2022**

- Conducted one-to-one help sessions for students taking the Topics in Electrical Engineering module

Languages and Technologies

- **Programming:** Python, Javascript, C++, Matlab, SQL
- **Tools:** Verilog, LTSpice, LabView, Simulink, Git, IBM Cloud, WordPress, Excel, Word, PowerPoint, Fusion 360

Technical Experience

Academic Projects

- **Autonomous Mars Rover (Top 2nd year group project)** Worked in a 7 member group to create a 2-wheel rover designed to autonomously navigate through a simulated Martian surface with obstacles. In drive subsystem, worked on interfacing optical flow sensor and motor driver with ESP32 micro-controller and designed control algorithm. In radar subsystem, designed and implemented circuit to filter, amplify and detect peak amplitude and frequency of Doppler radar signals.
- **Analogue Music Synthesizer (Top 1st year group project in category)** Designed and simulated a 88-key analog music synthesizer in LTSpice. Considered the product design specifications, costs, power consumption and waveform quality. Created a Python program to transcribe frequencies from a CSV file to piece-wise voltage level directives in LTSpice for testing.

Non-Academic Projects

- **Personal Website** Created website with GatsbyJS for the front-end and Strapi.io for the content management system (CMS). Optimized layout and images for different screen sizes and setup continuous deployment for static content on Netlify from Github repository. Configured Linux VPS, Postgres database and Nginx server to host CMS.
- **Optiver TraderCraft 2021 (2nd placed team)** Created a Python delta hedging trading algorithm and competed with other teams to make highest profit. I was selected to attend Insights Days program.

Online Courses

- **Build Basic Generative Adversarial Networks 2022** Learnt foundational concepts of GANs and created basic GANs with PyTorch
- **IBM Fullstack Cloud Developer Certificate 2021** Completed 10 courses on various Application Development and Cloud technologies. These include ”Introduction to Containers w/ Docker, Kubernetes and OpenShift”, ”Developing Applications with SQL, Databases, and Django” and ”Application Development using Microservices and Serverless”
- **Deep Learning Specialization 2020** Completed online course on the basics of Deep Learning including CNNs, RNNs, hyperparameter tuning, optimization and structuring ML projects
- **Intro to Digital Manufacturing 2020** Completed online course on foundational concepts of Autodesk Fusion 360 CAD/CAM software. Learned about digital manufacturing, principles of sustainable design, and manufacturing processes
- **Yale Financial Markets 2020** Completed online course on introduction to finance taught by Dr Robert Shiller

Activites and Interests

- Violinist at IC Sinfonietta Orchestra and pianist with ABRSM grade 7 Piano
- **President of IC AstroSoc** I collaborate with my committee to organise stargazings, lectures and trips and to maintain our telescopes
- **IC Space Society** Constructing a rocket to participate in the National Rocketry Championship. As part of the electronics team, I am designing a flight computer to record GPS and sensor values.