London, United Kingdom
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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 Systems Design, Digital Signal Processing, Instrumentation, Electromagnetics, Digital Electronics and Computer Architecture, 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

SOC Design Verification Intern — **MTK Wireless Ltd, Kent, United Kingdom** — **Apr 2023 – Sep 2023**

- Performed behavioural and transistor level simulations using industry standard tools
- Presented results in daily meetings and discussed with RFIC designers
- Created a script to help with setting up simulations and improved existing regression script

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

- Developed desktop GUI using ElectronJS, ReactJS and TailwindUI for querying an internal data management platform
- 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 into later versions

Undergraduate Teaching Assistant — **Imperial College London**

- In 2021-2022, conducted one-to-one help sessions for students taking the Topics in Electrical Engineering module
- In 2022-2023, assisted in software defined radio lab in the Communications module

Languages and Technologies

- **Programming:** Python, Javascript, C++, Matlab, Verilog, SQL
- **Tools:** Quartus, LTSpice, KICAD, LabView, Simulink, Git, IBM Cloud, WordPress, Fusion 360, Azure DevOps, STM32CubeIde

Technical Experience

Academic

- **Impedance measurement meter** Designed and built PCB with auto-balancing bridge to measure impedance. Programmed a STM32 microcontroller to generate sinewaves up to 100kHz and implemented Geortzel algorithm to process measured voltages.
- **Acceleration of computationally intensive application using FPGA (Altera DE1)** Implemented a hardware block in verilog using the Cordic algorithm to calculate an equation. The block was then invoked in the NIOS2 processor using a custom instruction.
- **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

- **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 the Insights Days program.
- **European Organization for Nuclear Research (CERN) 2019** Selected among 30 students for a weeklong study trip. Attended lectures on topics including particle physics, computing and medical applications. Visited data centre, CMS detector and anti-matter factory.

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. Increased membership by 10% and organised new trips to South Downs and Silwood Park.
- **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 and transmit sensor values.
- **Formula Student** Working on the electronics of a electric single seater race car.