Benjamin Martin Burke
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Ben Burke

Profile

A dynamic and driven individual with a passion for engineering and technology. Holds a degree in Computer Systems Engineering from the University of Kent and practical experience in programming, electronics, circuit design, and robotics. Awarded several academic achievements including the IET Award for distinction in an engineering degree. A quick learner with strong problem-solving skills and team-oriented mindset.

Education

Bedford College, 2016 - 2018

Electrical and Electronic Engineering, Level 3
Distinction* Distinction* Distinction
*: Star; higher achievement

University of Kent, Canterbury, 2018-2022

Bachelor of Engineering with Honours
Computer Systems Engineering with
Year-in-Industry
First Class Award

University of Kent – Systems-focused bachelor's degree incorporating computer science and electronic engineering modules. Key areas explored include fundamentals of electronics and circuit design, digital and analogue systems, mathematical systems modelling, and signal processing. A range of languages are covered, including MATLAB, C/C++, VHDL, Java, JavaScript, HTML, CSS, PHP, and SQL. Additionally, the course also explored the concepts of Object Oriented Programming, the fundamentals of AI and neural networks, and project management. Included a year-in-industry between the second and third stages.

Bedford College – Two-year A-Level-equivalent course covering core introductory areas of electrical and electronic engineering. Units covered core and further mathematics, electrical principles, circuit design and build with both theoretical and practical experience. The second year had a large focus on microcontrollers, microprocessors and programming in C++ and Assembly.

Skills

Programming Experience and Languages

- Java, Object Oriented Programming
- Python
- JavaScript / TypeScript
- C, C++
- Linux, Bash
- Powershell
- Microcontrollers (C++ and Assembly) (register level and real-time)
- FPGA Programming (VHDL)
- Front End Web Development – HTML, CSS, JavaScript, Angular, Electron
- Back End Web Development – REST, NodeJS, Express, Flask, SQL

Computer Aided Design and Manufacturing

- 3D Modelling, Fusion 360
- 3D Printing, FDM and SLA

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Experience

- **Final Year Dissertation Project, 2021-2022** – Development of a robotic prosthetic hand and complementary camera-based control system. Novel ground-up design of 3D-printed, mechanically self-contained robotic prosthetic hand. Custom-designed electronics control circuitry using ESP32 microcontroller, running custom-made program implementing FreeRTOS for multitasking. Complementary camera-based hand tracking system created, combining AI models with forward and inverse kinematics to generate control patterns for the developed prosthetic.

- **CGI – Year-in-Industry, 2020-2021** – Between the second and third stages of bachelor's degree, a year spent in CGI's Space, Defence and Intelligence Business Unit working on a Cybersecurity project as a Software Engineer. Worked in a team following Agile development through SCRUM. Hands-on experience in software engineering with a large-scale cybersecurity solution at the hardware and software side, spending the year in the deployment team helping manage releases and address system bugs.

- **Rotary Youth Leadership Awards, 2018** – Attended the 2018 RYLA program which builds leadership and team building skills through various physical and mental challenges such as outdoor activities, a business simulation game, and a two-day expedition. The program was intense and designed to push participants to their limits. Learned about time-management, team–management, understanding personal strengths and weaknesses, through exercises.

- **Cranfield Precision (Fives Landis), 2018** – Work experience at CNC Machine design and build firm. Shadowed highly experienced lead design engineer in electronics design and build. Learned about project management and electronics design engineering. Completed a PIC programming dice-roll project in Assembly Language.

- **Mercedes-AMG High Performance Powertrains, 2017** – Five-day work experience at the Mercedes AMG Formula 1 Engineering Center, learning about their high-performance powertrain through hands-on experience in various teams and learning about engineering workflows, parts inspection, and the use of quality assurance machinery.

Key Achievements

Institution of Engineering and Technology (IET) Award, University of Kent, 2022
Awarded for distinction shown at the University of Kent in a course leading to the award of a degree in Computer Systems Engineering.

The School of Engineering Industrial Placement Award, University of Kent, 2022
Awarded for best performance in industrial placement year final report at University of Kent.

Rapid Electronics Sponsored Best Project Demonstration Award, University of Kent, 2020
Awarded joint first place for best project demonstration for in 2nd year of bachelor's degree for group project module.

Rapid Electronics Sponsored Cross-Channel Robotics Competition, University of Kent, 2019
Awarded for demonstrating notable performance in inter-university robotics project in first year of bachelor's degree, sponsored by Rapid Electronics.

Mercedes-AMG Sponsored Engineering Student of the Year, Bedford College, 2017
Presented the Mercedes-AMG Sponsored for notable dedication to engineering in first year of course.