William Matthews MEng

📞 +44 (0) 7516 175554   ✉ will.a.matthews@me.com   🌐 willmatthews.xyz

WillMatthews   williamamatthews   🆔 0000-0002-2388-4369

EDUCATION

University of Oxford, University College   October 2019 - June 2023 (expected)
DPhil   *Oxford, UK*

- Title: Free Space Optical Wireless Communications using Silicon Photomultipliers (SiPMs) as receivers. Supervised by Prof. Steve Collins.
- Achieved world-record data-rates using a SiPM as a receiver with On-Off Keying and OFDM.
- Created a high-performance Monte-Carlo simulator of SiPMs (private, access available on request).
- Published a total of twelve papers, with two more in draft. Presented at three conferences.

University of Oxford, University College   Matriculated 2015 - Graduated 2019
First Class MEng Engineering Science   *Oxford, UK*

- Mathematics and Statistics-dense course. Specialisms in Information (ML, Signal Processing, Communications), Robotics (Control, Planning, Machine Vision), Math, Plasmonics and Semiconductors.
- Earned a Scholarship for First Class performance.
- 4th Year Project: 'Graph Modulation: Ultra-efficient Communication and Storage for 6G Systems'. Supervised by Prof. Justin Coon.

EXPERIENCE

Oxford University Racing   May 2019 - September 2020
Chief Software & Electrical Engineer   *Oxford, UK*

- Managed a team of ten people. Led the development for key electric vehicle systems.
- Responsible for all low voltage electrical systems and software on the vehicle.
- Developed a continuous integration system for vehicle control unit software, among other circuits.

PrOXisense Ltd   July 2018 - September 2018, July 2019 - April 2020
Intern, Consulting Software & Electrical Engineer   *Harwell, UK*

- Solely responsible for creating critical software to process sensor data, as well as processing raw signals for customer demonstrations, sensor calibration and internal R&D use.
- Created a custom thermal simulation package to guide future thermal product sensor development.
- Using Kalman filters, improved sensor accuracy and precision for blade tip timing and clearance measurement by a factor of 200 through my own initiative.
- Processed and presented results to clients, leading towards two new contracts.

TECHNICAL STRENGTHS AND CAPABILITIES

Languages	C++, Python 3, MATLAB, SQL, Haskell, shell, PHP, JavaScript, LaTeX, CSS, HTML
Workflow	zshell, tmux, vim, git, ssh, VSCode
Software	Tensorflow, Keras, Simulink, KiCAD, FreeCAD, Solidworks, Wireshark, GIMP
Methods	Discrete and Continuous Signal Processing, Machine Learning, Optimisation, Statistics, Data Visualisation

Daily-drives GNU/Linux. Experienced at designing, building and testing RF circuit boards, 3D printing.

HOBBIES AND INTERESTS

Fishing, Pool, Squash, Gym, OpenStreetMap Contributor.
Enjoys solving Project Euler problems, working on my blog, and other electrical/software projects.
Current reading in Compressed Sensing, Financial Markets and Derivative Pricing.

REFERENCES AND ADDITIONAL INFORMATION

References available on request. Additional information available on https://willmatthews.xyz.