Colum Crowe

Nationality: Irish **Date of birth:** 02/02/1995 **Phone number:** (+353) 876326399

Email address: colum.crowe@gmail.com

LinkedIn: https://www.linkedin.com/in/colum-crowe/

Home: 3 Holmwood Terrace, Southern Road, T12R882 Cork (Ireland)

WORK EXPERIENCE

Tyndall National Institute – Cork, Ireland

City: Cork | **Country:** Ireland

Software Application (R&D) Engineer

[01/02/2020 – Current]

- Created software to facilitate the development of a prototype wearable monitor for Parkinson's symptoms
- Researching and developing signal processing and machine learning algorithms for time series data
- Planning and coordination of clinical trials from study protocol design to data analysis and reporting

- Developed real-time application-level software to transmit data from a computer vision system to an industrial PLC over CIP Safety communication protocol
- Developed software in Python on Linux-based embedded platforms
- Developed software in C for RISC-V and ARM-based architectures, including PolarFire and STM32 boards

Tyndall National Institute – Cork, Ireland

City: Cork | **Country:** Ireland

Research Assistant

[01/02/2019 – 01/02/2020]

- Developed software in Matlab, Python and R to analyse data from wearable sensors
- Assisted in planning and conducting research studies and experiments
- Assisted in the preparation of scientific presentations and publications
- Provided support to senior staff members

Bankhawk Analytics – Dublin, Ireland

City: Dublin | **Country:** Ireland

Data Analyst

[01/05/2018 – 01/09/2018]

- Processed quantitative data in Excel, VBA
- Powerpoint slide decks and reports for stakeholders

Insight Centre for Data Analytics – Dublin, Ireland

City: Dublin | **Country:** Ireland

University research assistant internship

[01/01/2017 – 01/08/2017]

- Developed MATLAB GUI software to analyse video/wearable sensor data
- Signal processing of inertial sensor data

EDUCATION AND TRAINING

Master of Engineering (ME Biomedical Engineering)

University College Dublin [01/09/2016 – 01/09/2018]

Address: UCD, Belfield Dublin 4, D04 V1W8 Dublin (Ireland) | **Website:** https://www.ucd.ie/

Bachelor of Engineering

University College Dublin [01/09/2013 – 01/09/2016]

Address: UCD, Belfield Dublin 4, D04 V1W8 Dublin (Ireland) | **Website:** https://www.myucd.ie/courses/engineering/biomedical-engineering/

SKILLS

Communication and Project Management Skills

- Proven ability to collaborate with cross-functional teams and document technical processes through detailed reports and other project deliverables.
- Basic understanding of project management methodology through PMP course and self-study of key concepts, with a strong enthusiasm to learn and gain more hands-on experience with Agile methodologies.
- Co-supervisor for several masters students and internship projects.
- Proficient in using Git for version control, managing code hosted on a Bitbucket server in collaborative software development projects.

C/C++ and Embedded Programming Skills

- Experience in embedded systems programming, including developing bare-metal C applications for sensor data acquisition and communication.
- Basic experience writing programs for STM32 from internal workshops and courses.
- Basic experience with C/C++, object-orientated design and programming from academic coursework.
- Experience using Eclipse-based IDEs like SoftConsole and STM32CubeIDE for embedded system development.
- Proficient in serial debugging and using the GNU debugger (GDB) for troubleshooting embedded systems.

Experience in Scripting Languages and Wireless Sensing

- Experience with signal processing and machine learning libraries, including TensorFlow, scikit-learn, and SciPy.
- Implemented algorithms from existing literature and developed novel methods to contribute to research publications:
    - https://orcid.org/0000-0002-7479-9922
    - https://scholar.google.com/citations?hl=en&user=ZCWmAVQAAAAJ
- Developed software and applications in Python and Matlab to process and analyse data from wearable sensors, including inertial measurement units, photoplethysmography (PPG), electrocardiography (ECG), electromyography (EMG) and time-of-flight (ToF) sensors.
- Lead data collection trials involving wearable inertial sensors (XSens, Axivity, Actigraph) with clinical subjects.