Kevin Keegan **Dublin, Ireland** kevinkeegans@gmail.com
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Summary

Electronic Engineer with 2 years of industry experience.
1st Class Honours Masters degree in Electronic & Computer Engineering from University College Dublin.
Experienced in **Verilog, Python, C, Java, MATLAB & Linux**.
Interested primarily in digital signal processing, digital ASIC design and embedded systems.

Technical Skills

- **Languages/Tools**: Verilog, Python, Bash, Java, C/C++, LISP, ASM (MIPS32, 8051), MATLAB, Git, LaTeX.
- **Network Programming**: Experienced in TCP/IP Socket programming in Python, C & Java.
- **Concurrent Programming**: Experience in multiprocessing & multi-threaded development.
- **Operating Systems**: Professional experience developing in Linux and Windows environments.
- **Embedded Systems**: Experience in front-end Digital Design (RTL) & developing for microcontrollers such as Arduino, Micropython & ADuC841. Knowledgeable in the use of Hardware Timers/Counters, Interrupt service routines and SPI communication.
- **Digital Signal Processing**: Knowledgeable in Fourier analysis, digital filtering and digital communication theory.

Professional Experience

- **Adesto, ASIC & IP Division** Dublin, Ireland
  Mixed Signal Design Engineer *Jan 2020 – Present*
  - Front-End Digital Design
  - Developed software to automatically generate a Verilog implementation of a frequently redesigned block, along with its System Verilog testbench.

- **Susquehanna International Group (SIG)** Dublin, Ireland
  Market Data Engineer *Sept 2018 – Nov 2019*
  - Monitoring and maintaining critical market data systems.
  - Pcap file analysis via Wireshark/tshark
  - Developed validation tools to test new software before pushing to production.
  - Implemented a system in Python & Bash to archive daily market data recordings from company colocations to a central archive.
  - Developed a set of scripts to analyse the latency of a market data system when subject to a high data rates.
  - On call work. When on call, I was the first point of contact for issues regarding SIG's market data infrastructure.

- **Intel Corporation, Internet of Things and Wearables Group** Kildare, Ireland
  Physical Design Engineer Intern *Jan 2017 – Aug 2017*
  - Worked in a team designing a system in TCL to automate the design, layout & routing of a custom CMOS block.

- **University College Dublin** Dublin, Ireland
  Voluntary Teaching Assistant *Sept 2015 – Nov 2015*
  - Voluntary Teaching Assistant in weekly laboratories for the engineering module, EEEN20010 Computer Engineering I: Data Structures and Algorithms through C.

- **FireEye, Inc.** Dublin, Ireland
  Software Engineer Intern *May 2015 - July 2015*
  - Developed BASH scripts to facilitate and automate product testing.
  - Built a customized, kickstarted centOS distro to include the configurations and packages necessary for running & testing a company product.

Education

- **University College Dublin** — Dublin, Ireland
  Master of Engineering in Electronic & Computer Engineering; 1st Class Honours — *Sept 2016 – Sept 2018*
  - **GPA**: 3.84/4.2
  - **UCD Intel Masters Scholarship**: Awarded by Intel to top five students entering ME program.
- **University of California Los Angeles** — Los Angeles, CA
  Exchange - Electrical & Electronic Engineering; ***GPA: 3.18/4.0*** — *Jan 2016 – Jun 2016*
- **University College Dublin** — Dublin, Ireland
  Bachelor of Science in Electrical & Electronic Engineering; 1st Class Honours — *Sept 2013 – Sept 2016*
  - **GPA**: 4.09/4.2
  - **Entrance Scholar**: Awarded to top academic achievers entering UCD from secondary school.
- **Coláiste Eoin** — Dublin, Ireland
  Irish Leaving Certificate; ***Points: 595*** — *Sept 2007 – Jun 2013*

Projects

- **UCD Masters Research Project** — Dublin, Ireland
  Digital and Analog Implementations of Visible Light Communication — *Sep 2017 – May 2018*
  - Project Thesis: **thekegman.github.io/Thesis.pdf**
  - My project proposes a real-time digital, visible light communication system employing a form of On-Off Keying modulation. It is implemented using an Arduino UNO based LED-Photodiode communication link. It can successfully transfer files between computers over a distance of up to 1.8m.
  - Software for this system was developed in C & Python 3.
- **Custom Guitar Tuner**
  Analog amplifier & DSP running on pyboard — *Jan 2020*
  - Designed an Op-amp based electric guitar amplifier, implemented on a breadboard.
  - This amplified signal is sampled using a pyboard microcontroller.
  - The pyboard runs an auto-correlation based pitch estimation algorithm I developed.
  - This algorithm estimates the fundamental frequency of the string being played.
  - LEDs are used to indicate if the string is in-tune, flat or sharp.
- **Noodle Dance Camera Filter**
  Python Script — *Jan 2020*
  - Python script using primarily numpy to recreate the popular Camera filter on TikTok.
  - Source: **github.com/Thekegman/noodledance**
- **Spotify Collab Queue**
  WebApp — *Feb 2019*
  - Web app with a backend implemented in Python using the Flask framework.
  - Using Spotify's API, this web app allows people to collaborate in what music is played by having them submit songs to a live queue.
  - Source: **github.com/Thekegman/spotify-collab-queue**
- **Nikon Trigger**
  Microcontroller project — *Jan 2018*
  - Program implemented for pyboard that uses an IR LED to remotely trigger a Nikon camera's shutter release.
  - The 38kHz NEC protocol used by the Nikon 'ML-L3" camera remote is replicated using PWM hardware available on pyboard.
  - Source: **github.com/Thekegman/Nikon-Trigger-for-MicroPython**
- **Android Apps**
  Implemented in Java, available on Google Play
  - Guess That Word May 2016
  - The Maze Extravaganza 3D - *OpenGl* Aug 2013
  - The Maze Extravaganza - *36k+ downloads* July 2012
  - Developer page: **http://tiny.cc/x32oaz**