

RUTH ABRA

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PROFILE

I am excited to be starting a new career in computer vision, and look forward to implementing my technical skills in a commercial environment. Combining my transferable skills gained from seven years in engineering with my aptitude for fast learning, I will provide knowledge-based intelligence and critical analysis to all my future projects.

After gaining excellent grades in my MSc, I would relish the opportunity to develop my career in a dynamic, cutting-edge company. I am inspired by new technologies and methodologies, which has led to me complete a thesis on convolutional neural networks in self-driving cars.

EDUCATION AND LEARNING 2016 - PRESENT

MSc DATA SCIENCE & ANALYTICS Distinction (Pred.) • 2016 - 2017 • BRUNEL UNIVERSITY

- **Thesis:** *Convolutional Neural Networks in Self-Driving Systems*: a practical investigation into the implications of unusual scenarios
- **Programming:** Python, R, Pig, Hive, C/C++
- **Computer Vision:** OpenCV, Pillow, CNNs, Tensorflow-GPU, Keras
- **Additional:** Supervised and unsupervised learning, GLMs, virtual machines, Hadoop stack (Pig, Hive, MapReduce, Yarn, Spark)

Artificial Intelligence for Robotics • UDACITY.COM • Sept 2017 - present

Localisation, Kalman filters

Computer Vision • UDACITY.COM • Aug 2017 - present

Filters, edge detection, Hough and Fourier transforms, stereo geometry

PROJECTS

SELF-DRIVING REMOTE CONTROL CAR • May 2017 - present

Image capture via camera from a model RC car saving to an onboard microcomputer via OpenCV (Python). Arduino programming for capture and control of servo data with emergency safety override system. Convolutional Neural Network to be used for steering.

FILM SENTIMENT ANALYSIS FROM TWEETS • April 2017

Twitter analytics app utilising the Twitter streaming API. Presented in HTML, CSS and Javascript for interactive, real-time graphs. Served from a Flask server with Tweepy and SQLite3 database. Hosted on Google Compute Engine.

www.movie-reviews.abraininsight.com

STOCK INDEX PREDICTION FROM TWEETS • Jan 2017 - April 2017

Natural language processing predicts the volatility of the S&P500 Index. The app uses a Tweepy scraper, Pandas and Firebase database. HTML, CSS and Javascript power the website originally hosted on Heroku.

www.twitter-spx-volatility.com

CAREER HISTORY

ENVIRONMENTAL ADVISOR • Dec 2013 - Sept 2016 • VOLKERFITZPATRICK LTD

- Responsible for eight simultaneous projects in London and East Anglia
- Developed construction methodologies for ecologically- and noise-sensitive areas
- Carried out audits across the Rail Division
- Established good relationships with regulators and clients, leading to efficient approvals and favourable constraints
- Trained site teams via formal presentation and toolbox talks

Heavy night work in multiple central London locations required sensitive liaison with key stakeholders. Due to instigating regular meetings with statutory bodies, I built up good and trusting relationships. I was then able to negotiate consent for work on sites outside of normal protocol, resulting in significant cost and time savings.

SITE ENGINEER • June 2010 - Dec 2013 • VOLKERFITZPATRICK LTD

- Led piling and groundwork subcontractors to attain milestones on programme and to budget
- Worked with Senior Engineers to solve logistical and engineering problems including drawing conflicts and activity planning
- Successful project management of snagging works on the Athletes' Village: development and implementation of solutions to defects
- Use of AutoCAD for design checks and as-built collation

Project managing significant snagging works on the Olympic site meant I had the responsibility to develop solutions for defects, liaise with specialist subcontractors, programme works and manage and supervise labour. The result was successful client sign off of the vast majority of issues in a logistically complex environment.

PREVIOUS EDUCATION

BEng CIVIL & ENVIRONMENTAL ENGINEERING 2:1 • 2006 - 2010 • CARDIFF UNIVERSITY

Computing, Engineering Analysis, Structural Mechanics, Dissertation: *Uncertainty in the UK's GHG Emissions Inventory*

BA MUSIC & PHILOSOPHY • 1998 - 2001 • CARDIFF UNIVERSITY

A-LEVELS: Maths, Physics, Music and General Studies

PROFESSIONAL REPRESENTATION

MSc COURSE REPRESENTATIVE • OCT 2016 - SEPT 2017 • BRUNEL UNIVERSITY

Listened to and acted on the concerns of fellow students:

- Identified a gap in course content and negotiated with the department to provide additional lectures in Business Intelligence
- Gained serious consideration of concerns on new electronic exams and practical mitigation put in place

INTERESTS

MARTIAL ARTS • Karate and Tai Kwondo

DIY • House renovation, including concrete pours and project management

MOTORCYCLE TOURING • I have a Honda NC750 which I ride across Europe and the UK

LANGUAGES • Fluent Spanish and basic German