Craig A. Glastonbury

Curriculum vitae

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Education & Work

2017 **Postdoctoral Researcher**, *Big Data Institute (BDI) - University of Oxford*, Oxford, UK.

Understanding the genetic basis of obesity, type II diabetes and body fat distribution using regulatory genetics and histological imaging data.

2016 2016 **Machine Learning MRes module**, *King's College*, London.

Biomedical Engineering course covering machine learning, probability and statistics. Taught by Professor Giovanni Montana

2013 2016 **Statistical Genomics PhD**, *King's College*, London.

My PhD was focused on using statistics and computational methods to understand the genetic control of gene expression in humans and how genetic variation that modulates expression influences cardio-metabolic traits and obesity. A primary focus of my thesis was to understand gene-by-environment interactions and how they contribute to complex disease. This work resulted in several papers, including first authorship in The American Society of Human Genetics, and several contributions to papers in Nature Genetics, Diabetes and Obesity.

2012 2013 **Ethical Hacker**, *Deloitte*, London.

Security cleared by the Ministry of Defense (MoD) and Employed by Deloitte UK to penetration test networks, web applications, mobile applications and perform social engineering for several FTSE100 companies, government agencies and departments.

2009 2012 **BSc Biological Sciences**, *Imperial College*, London.

Specialism in Genetics and Immunology. Training in statistics and bioinformatics. Final year project: Design a retroviral vector for a transcription factor (Batf3) that is involved in dendritic cell development.

Languages

English **Native** *Mother Tongue*

Skills

Development

Languages R, Python & Bash Databases MySQL

Other Tensorflow, Theano, Keras , Tensorboard, OpenStack cluster configuration, elasticluster, virtualisation, SLURM & SGE environments. Multiple machine/deep learning libraries

Teaching & Clinical responsibilities

Teaching

- **Mentorship and guidance to new lab members** - As the first PhD student under Dr. Kerrin Small's supervision, I was responsible for welcoming and guiding new PhD's and postdoctoral researchers that joined our lab. This included briefing on on-going research, setting them up with data and cluster management and access.
- **TwinsUK Clinical Research Facility operations** - As a PhD student in the department for Twin Research, I volunteered in data collection and clinical visits once a week. I would perform two, three hour visits with twin pairs who would visit our clinical research facility at St Thomas' Hospital, and I would conduct a range of fitness tests, questionnaires and assay based tests with them.

Grants, Awards & Presentations

Grants & Awards

- **Novo Nordisk Pump Priming Grant** - Awarded 25k Project focusing on using deep learning to perform automated cellular phenotyping with imaging data
- **NVIDIA GPU Grant** - Awarded a Titan X Pascal GPU for my work on using image segmentation methods for histology imaging data (£1.5k)
- **Kaggle competition expert (top 0.8% overall - 524th/60,430)** - Kaggle is a world leading machine learning competition website in which companies provide data and problems for the kaggle community to solve. Competitions I have participated in include fish species detection from hauler boat video footage, lung cancer nodule detection and prediction from CT scans, cervical cancer type classification and assessing duplicate questions from the Quora database.
- **Lisbon Machine Learning Summer School (LxMLS, 2017)** - Selected to participate in a highly competitive (60% rejection rate) machine learning school/conference sponsored by Google.
- **Genetics Society Junior Scientist Conference grant - 2017** - Awarded funding to attend the Lisbon machine learning school (LxMLS)
- **Genetics Society Junior Scientist Conference grant 2016** - Awarded funding to attend the American Society of Human Genetics (ASHG16)
- **Hackseq 2016** - Selected to attend and participate in a genomics hackathon at the University of British Columbia, Vancouver. Over a weekend our team came up with a method to optimize parameters for genome assembly (https://f1000research.com/articles/6-197/v1).
- **American Society of Human Genetics** (ASHG 2015) - Reviewers Abstract award (Top 10% of abstracts submitted)
- **American Society of Human Genetics (ASHG15)** - Selected for ASHG Poster highlight in the cardiometabolic trait section (Top 3% of abstracts)
- **Leena Peltonen School of Human Genetics (2015)** - Selected as 1 of 20 students to attend a highly competitive school in which students are selected on merit to present to, and network with, 20 world leading professors in the field of human genetics.

Presentations

- **ASHG Poster Presentation, 2017** - In-silico characterization of cell-type composition in adipose tissue: implications for 'omic analyses and associations to adiposity measures
- **ASHG Platform Presentation, 2016** - Adiposity-dependent interactions on multi-tissue transcriptomes
- **ASHG Poster presentation, 2016** - Population level variability in adipose tissue cell type composition
- **King's College London RNA-Seq day** - Deconvolution of Adipose tissue cell type composition using RNA-Seq (Invited speaker - 2015)
- **ASHG Poster presentation, 2015** - Adiposity dependent regulatory effects on multiple tissue transcriptomes - Glastonbury et al., (ASHG Poster presentation, 2015)
- **Quantitative Genomics 2014 & 2015 Presentation** - Detecting gene by environment interactions on expression in multiple tissues (Quantitative Genomics 2014/2015)
- **Poster presentation at Biology of Genomes (BoG15)** - Deconvolution of Adipose tissue cell type composition using RNA-Seq

Interests

Subjects	Statistics, Economics, Politics & Finance
Travelling	Culture, Architecture, Food
Sport	Long distance cycling, Badminton, Squash

Journal Publications

2017 — Cohen, Joseph Paul, Genevieve Boucher, **Craig A. Glastonbury**, Henry Z. Lo, and Yoshua Bengio. "Count-ception: Counting by Fully Convolutional Redundant Counting". In: *CoRR* abs/1703.08710. URL: http://arxiv.org/abs/1703.08710.

2017 — Pallister, T, MA Jackson, TC Martin, **Glastonbury, CA**, A Jennings, M Beaumont, RP Mohney, KS Small, A MacGregor, CJ Steves, et al. "Untangling the relationship between diet and visceral fat mass through blood metabolomics and gut microbiome profiling". In: *International Journal of Obesity*.

2016 — Bailey, et al.*. "Genome-wide association analysis identifies TXNRD2, ATXN2 and FOXC1 as susceptibility loci for primary open angle glaucoma". In: *Nature Genetics*.

2016 — **Glastonbury, C**, A. Vinuela, A. Buil, R. Durbin, E. Dermitzakis, T. Spector, and K. Small. "Adiposity-Dependent Regulatory Effects on Multi-tissue Transcriptomes". In: *AJHG*.

2016 Kaul, S, H Xu, E Maruko, **Glastonbury, C**, K Small, G Dallinga-Thie, M Civelek, M Thomas, I Goldberg, and M Sorci-Thomas. "Procollagen C-endopeptidase enhancer protein 2 (PCPE2) Deficiency Profoundly Affects Adipose Distribution in Mice and Humans Linking HDL Metabolism to Adipocyte Biology". In: *Arteriosclerosis, Thrombosis, and Vascular Biology*.

2016 Menni, C, **Glastonbury, C**, K Nikolaou, K Small, K Mahney, T Spector, and A.M Valdes. "Metabolomic profiling to dissect the role of visceral fat in cardiometabolic health". In: *Obesity*.

2016 Small, K, L Quaye, A Hough, M Todorcevic, A Mahajan, M Horikoshi, A Buil, A Viñuela, **Glastonbury, C**, J Brown A Bell, R Cox, Gloyn A, Karpe F, and McCarthy M. "Characterisation of the KLF14 trans-regulatory network". In: *Submitted (Nature)*.

2016 Tsai, PC*, **Glastonbury, C***, A Vineula, R Durbin, E Dermitzakis, T Spector, and K. Small. "Tobacco smoke modulates gene expression and DNA methylation via genetic variation in multiple human tissues". In: *Submitted PloS genetics*.

References

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