

# Lee Hodgkinson

University of Nottingham  
Nottingham, UK  
<https://blog.logicon.io>  
lee@logicon.io

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## Objective

I am a Mathematical Physics PhD graduate who thrives in challenging environments from which I can learn and improve. I have strong mathematical and computing skills, a passion for technical challenges, and a consistently high academic track record.

My time in academia trained me to be self-motivated and organised, and I am capable of learning and employing new concepts quickly and independently. I am also comfortable presenting and publishing my work (*5 peer-reviewed papers*), having spoken at several international-level conferences and published my research in journals of international repute.

As well as analytical ability and project management skills, work in academic research gave me extensive experience coding in C++ and Python, and experience using high-performance super clusters (HPCs) running linux for distributed computing tasks.

Over the last 6 years, I have been successfully working in freelance, and have gained extensive experience developing full-stack Django driven websites, data-mining with Scrapy, developing APIs with DRF, task management with Celery, plus great proficiency in front-end development with HTML, CSS, Javascript, jQuery and AJAX. I also have experience in Machine Learning techniques.

I have DevOps experience too, including Ansible, Docker and Fabric.

I am passionate about coding, and always try to write clean, DRY, well-documented, high-quality, maintainable code conforming to PEP8 standards. I of course manage my code via version control, and I believe communication through tools like Slack, along with an agile flow using Trello or Waffle and regular stand-ups are key to success.

## Professional Experience

- **Marcel** July 2018 - present  
*Backend developer*

I built a Django REST API using DRF that served as the backend for an art-sharing iOS app.

- Used most aspects of DRF including nested viewsets and composed permissions.
- Communication with Slack in medium sized team. Agile workflow Waffle. Weekly stand-ups
- Serverless architecture with AWS Lambda functions.
- SQS, Elastic beanstalk, S3, Cloudfront, SNS
- Optimized for growing user base with prefetching
- FTS postgres searching

- **Heartface** Apr 2018 - Jan 2019  
*Backend developer*

I built a Django REST API using DRF that served as the backend for the MVP of a social shopping iOS app. In this role I was part of a small team of 5 people.

- Used most aspects of DRF

- Communication with Slack. Agile workflow Trello.
- DevOps using Ansible and general Debian sysadmin
- Scraping using Diffbot and BeautifulSoup
- ElasticSearch
- Social integration with allauth

- **Evopricing**

July 2015 - Mar 2018

*Lead data-sourcing engineer*

I developed a “smart” Scrapy spider that was trainable via a Django web GUI. This work was completed mostly alone, but at times I took the role of lead developer, training a team of junior developers, collaborating via git and performing code reviews. This project allows a semi-technical user (XPath knowledge) to configure the spider for different target sites. In this role, I dealt with many challenges, such as:

- Prototyping and figuring out the initial architecture
- Ban avoidance with custom proxy-rotation and user-agent rotation middleware
- Data integrity and cleaning
- Writing an API in DRF allowing frontend run-scheduling and monitoring.
- Distributed scrapes
- Provisioning servers from scratch.
- Writing custom loaders, extensions, middleware and pipelines.

- **Dooster**

Oct 2014 - July 2016

*Backend developer*

Worked on developing and maintaining this GTD Django-driven website. I spent over 6 months working on dooster after establishing a long-term working relationship with the client, and then continued to maintain the site after. The initial project was to give dooster a sleek, contemporary and responsive new look. Later work ranged from absolutely everything, some examples are:

- Upgrading the google integration features for google calendar and contacts sync, plus google social signin.
- Lots of new features, pages, forms , views, middleware etc
- General backend server administration and management.

- **Singularity**

July 2014

*Mezzanine Theme*

Mezzanine is a Django CMS. I created a theme for Mezzanine that is now featured and on sale at the [MEZZaTHEME](#) marketplace. The back-end of this theme is written in Django, and the front-end uses HTML5, CSS3, Javascript, jQuery and AJAX. Some features of this theme include:

- Blog with threaded and paginated comments that use AJAX for validation and paging.
- Content which is editable in the admin but also in-line.
- Fully integrated with social networking. User just adds details in admin to generate appropriate share buttons, etc...
- Fully responsive one-page design.
- Color picker to change color-scheme of theme.

- **Clandestine Brewing**

*Elance client*

Django driven site

*May 2014 —*

Django driven website for Californian nano-brewery. The site is a sleek one-page responsive design hosted on Heroku and Amazon S3. It uses metrics via Graphite (e.g. cold room temperature probe graphs), and the admin is highly customised. Middleware to force “Are you over 21?” check on splash page, and numerous Django filters were created. The Taplist for brewery “big screen” is AJAX refreshed every 5s to quickly reflect product updates. Site is integrated with multiple APIs using background periodic Celery controlled scraping tasks. For example:

- Facebook-graph API via Python-SDK. Custom built and styled feed.
- Social ticker incorporating: Twitter, Untappd, Foursquare content polled from the associated APIs.
- Product prices in the local postgresql database poll Square payments API taking those prices as authoritative.
- Google Calendar API is polled for latest brewery events to announce on homepage

- **Oddsbot**

Django driven site

*Jan 2014-Nov 2014*

Django driven site with Python’s Scrapy being used to gather data from over 50 bookmakers and betting exchanges. This data is analysed for so called “arbitrage opportunities”, and these are presented in a table on the site. Features:

- User accounts and profiles : custom time-zones for event data, custom betting commissions, avatar, blurb, email management, profit tracking.
- Saveable search filters and e-mail alerts for premium members.
- Javascript calculator tools to aid users.
- Site wiki.

- **Misc**

As a freelancer I’ve also completed lots of small projects with clients over the years, these include

- Lystr: a Buzzfeed-like Django app allowing users to create and rank lists of various things. Saxxa Security via UpWork. May 2017-Jul 2017.
- Imagency: Worked with TrinityTech on this Django-driven influencer marketing website, combining frontend skills (sass) with backend (Django). Jun 2018 - Ongoing
- Chabadog: Worked with Modizy on a Django-driven e-commerce website for pets with Iceberg Marketplace. Nov 2014-Dec 2014
- Componentality: Adding i18n multi-language support to Mezzanine driven CMS for e-commerce site. Jun 2015

## Degrees and Academic Positions

- **University of Nottingham**

*EPSRC Doctoral Prize*

Nottingham, UK

*June 2013 — December 2013*

- Funding for postdoctoral study at Nottingham and £9835 support grant.
- Awarded to top 15% of EPSRC funded researchers to increase impact of PhD in terms of knowledge transfer, publications and outreach.

- **University of Nottingham** Nottingham, UK  
*Ph.D. Applied Mathematics* *2009-2013*
  - Advisor: Jorma Louko
  - Thesis: Particle detectors in curved spacetime quantum field theory
  - Relevant lecture courses: QFT, Black Holes, Differential Geometry
- **University of Manchester** Manchester, UK  
*M.Phys. Theoretical Physics (First class)* *2003 – 2007*
  - Advisor: Jeff Forshaw
  - Thesis: Reinstating the ‘no-lose’ theorem for NMSSM Higgs discovery at the LHC
  - First Class

## Technical Skills

- Programming Languages and frameworks
  - C++, Python, Django, Scrapy, Celery, DRF, PyQt, Java
- Markup Languages, scripting, etc.
  - $\text{\LaTeX}$ , HTML, bash, CSS, Javascript, jQuery, AJAX, JSON, XML, Amazon AWS, Heroku
- Specialized Software
  - Maple, Mathematica (extensive programming experience)
- Databases
  - Postgresql, MSSQL, MySQL, Mongo, Redis, Memcached
- DevOps
  - Ansible, Fabric, Server admin
- Operating systems
  - Linux, Windows

## Awards

- **Universitas 21 prize** University of Nottingham  
*£1000* *March 2013*
  - Funding for month-long visit to the University of British Columbia
- **Platt prize** University of Manchester  
*£100* *2007*
  - Awarded for outstanding Masters dissertation
- **Manchester Success Scholarship** University of Manchester  
*£1500* *2003*
  - Awarded to student about to undertake undergraduate study at Manchester with 3 ‘A’ grades or more at A-Level