Andrew Burnie

apburnie@hotmail.co.uk LinkedIn/In/apburnie

Flat 27, 68 Vincent Square, London, SW1P 2NU

Frontend Software Engineer (PhD)

Frontend Software Engineer with specialist expertise in cryptoassets, blockchain and AI. Skilled in JavaScript, Vue, React, HTML, CSS, TypeScript and Python and in using these technologies to deliver products. Currently working on projects in the NFT (at Mattereum) and Conversational AI (at Wluper) spaces and looking for opportunities specifically in the cryptoassets and blockchain sector.

Recent successful projects include: asynchronous JavaScript programming for Mattereum, using Vue to create a Conversational AI Assistant for Wluper and using Python and React to create a Conversational AI Assistant for a US startup (Euclid). Also have a PhD in cryptoassets and blockchain from UCL.

Other achievements include being registered on Toptal, which selects the top 3% of global talent in AI Engineering; HackerRank-certified for JavaScript, Python and Java skills; and a Rasa-Certified Conversational AI Assistant Developer.

Highlights

- **Frontend:** JavaScript, TypeScript, HTML, CSS and SCSS
- **JavaScript:** Vue, React and Node.js
- **Crytpoassets and Blockchain:** PhD and 6 publications in top-tier conferences and journals
- **Non-fungible Tokens** (Mattereum)
- **Cloud Computing and APIs:** AWS, Azure, JSON, Postman and curl
- **Breadth of programming experience:** Python, Java, Ruby and R
- **Creating and Deploying Products**
- **Backend:** Serverless Computing and Databases (SQL and NoSQL)
- **Mathematics and Machine Learning:** Probability, Linear Algebra and Neural Networks
- **Finance:** MSc Finance
- **Agile Software Development:** 5+ years' experience
- **Test-Driven Development:** mocha, chai, Selenium and Puppeteer
- **Experienced in working with early stage companies**

Industrial Experience

Mattereum Frontend Engineer (May 2021–): Creating, deploying, maintaining and continually improving software and tools to support the Ontology Team in creating, validating and publishing Physical Asset NFTs that meet customer requirements. Physical Asset Non-fungible Tokens (NFTs) combine smart contracts with asset passports for real-world assets. This involves using JavaScript asynchronous programming to create servers and headless browsers that support Command Line Tools, Preview Software and comprehensive Automation Testing Tools. Technologies used include JavaScript, TypeScript, Node.js, Express.js, npm scripting, File System Tools (fs), Cross-Platform File Watching (Chokidar), Synchronised Browser Testing (Browsersync), Headless Browsers (Puppeteer), HTML, CSS, Mocha, Truffle, Templating Engines, ImageMagick and CI/CD.

Wluper Fullstack Engineer and Solution Architect (February 2021–): Created and continually improving the Conversational AI Assistant UI and tools to support customers: Client Portals, Analytics Dashboards, Bug Reporting, Login Portals, SDKs, APIs and API Key Management Portals. This uses JavaScript, Vue, CSS, SCSS, HTML, Android Studio (for Android Apps), Serverless Computing functions (AWS Lambda) and NoSQL databases (DynamoDB) – all deployed on AWS. Test-Driven Development enforced through unit tests and end-to-end tests in JavaScript (Nightwatch.js, Selenium, Mocha and Chai) and Python (pytest).

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Euclid AI Engineer (September – December 2020): Created a Conversational AI assistant that could handle user queries, present lectures and quiz the user's knowledge to offer a tailored learning experience for students of The Euclid School (https://euclidschool.com). This was deployed on Microsoft Azure and used React, Python and a Microservices Architecture.

UCL and The Alan Turing Institute (National Institute for Data Science and AI)
PhD in Computer Science (October 2017 to June 2020): Completed PhD in 2 years and 9 months, independently solving complex problems in the fast-moving cryptoassets and blockchain space, resulting in six publications, lectures to the FinTech industry and collaboration with a leading FinTech regulatory specialist in cryptoassets (Eversheds Sutherland LLP). Publications included a taxonomy (Ledger) and combining this fundamental analysis with a quantitative analysis of social media text (published in Royal Society Open Science, Frontiers in Blockchain, ACM SIGIR and Cryptocurrency Research Conference) to understand phasic shifts in Bitcoin and Ethereum price series.

AI Engineering Consultant at Toptal, ERS, Hitachi and Model Citizens Ltd (June 2020 – February 2021 and April 2016 – September 2017): Completed AI Projects in insurance, entertainment, retail and utilities sectors. This involved training predictive Machine Learning Algorithms, Customer Data Analysis and Data Auditing using Python, R and SQL. Also responsible for the management of the recruitment process at ERS, growing the team to four AI experts.

Education

PhD in Computer Science (2017 to 2020) UCL and The Alan Turing Institute '*Processing Social Media Text for the Quantamental Analyses of Cryptoasset Time Series*'

MSc Finance (Distinction) (2014 to 2016) Grenoble Graduate School of Business
Dissertation on internet company valuation published in Bankers, Markets & Investors, 2017

CFA Program Levels I and II (2014 to 2015)

BA (1st) Management Studies and Economics (2011 to 2014) University of Cambridge and Judge Business School

Certifications

- **Toptal AI Engineer**: Toptal selects the top 3% of global talent for contract work
- **Rasa Certified Developer**
- **HackerRank Certificates**: JavaScript, Python and Java skills assessments
- **Coursera**: Neural Networks and Deep Learning, Improving Deep Neural Networks and Sequence Models (2018); and Machine Learning Specialization (2016)
- **Advanced C++ Coding Course** (QA) 2016
- **Makers Academy** (pair programming) 2015
- **Financial Market Trading Certificate** (London Academy of Trading): 91% 2015

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Publications

1 **Burnie A.** Processing Social Media Text for the Quantamental Analyses of Cryptoasset Time Series. PhD Thesis.

2 **Burnie, A., Yilmaz, E., and Aste, T.** Analysing Social Media Forums to Discover Potential Causes of Phasic Shifts in Cryptocurrency Price Series. Frontiers in Blockchain, 3(1), 2020.

3 **Burnie, A., and Yilmaz, E.** Social media and Bitcoin Metrics: Which Words Matter. Royal Society Open Science, 6, 2019.

4 **Burnie, A., and Yilmaz, E.** An Analysis of the Change in Discussions on Social Media with Bitcoin Price. In 42nd International ACM SIGIR Conference on Research and Development in Information Retrieval. Paris, France, 21-25 July 2019.

5 **Burnie, A., Burnie, J., and Henderson, A.** Developing a Cryptocurrency Assessment Framework: Function over Form. Ledger, 3, July 2018.

6 **Burnie, A.** Exploring the Interconnectedness of Cryptocurrencies using Correlation Networks. In Cryptocurrency Research Conference 2018. Anglia Ruskin University, Cambridge, UK, 24 May 2018

7 **Burnie, A., Henderson, A., and Burnie, J.** Putting Names to Things: Reconciling Cryptocurrency Heterogeneity and Regulatory Continuity. Journal of International Banking and Financial Law (JIBFL), 33(2): 83-86, February 2018.

8 **Burnie, A., and Mchawrab, S.** Pricing of Internet Companies: Financial and Non-financial Value Drivers. Bankers, Markets & Investors, 146, p 21-37, January-February 2017.