

ROBIN GUO

Software Engineer | Python · AWS · FinTech

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PROFILE

Advanced Computer Science (Artificial Intelligence) master's graduate with experience building Python applications, deploying cloud infrastructure and automating development workflows. Hands-on experience with FastAPI, AWS, Terraform, Docker and GitHub Actions, alongside machine-learning model development and operational troubleshooting. Interested in software engineering and financial technology, with ongoing work on a dividend-change prediction prototype.

EDUCATION

Master's in Advanced Computer Science (Artificial Intelligence) <i>University of Leeds</i>	Leeds, UK Sep 2025 – Sep 2026
Bachelor's in Information Security <i>Changchun University of Technology</i>	Changchun, China Sep 2021 – Jun 2025

PROFESSIONAL EXPERIENCE

Saint Denis <i>Software Engineering Intern</i>	Remote Jul 2026 – Present
- Built a RAG-based customer support application using React, FastAPI, PostgreSQL and pgvector, with semantic policy retrieval, grounded responses, order-status lookup and explicit human escalation. - Deployed the application on AWS ECS Fargate with Terraform, Docker, an Application Load Balancer and Amazon RDS; automated delivery using GitHub Actions with OIDC-based AWS access. - Implemented API-key-protected admin ticket operations, AWS WAF controls and CloudWatch logging; validated application health, access controls and web-threat blocking through automated smoke and regression tests.	
DAS-Security <i>Cyber Security Engineer, 19th Asian Games</i>	Hangzhou, China Jul 2023 – Oct 2023
- Investigated web attacks, network scanning, DNS tunnelling and configuration risks using traffic and security logs; analysed operational issues and supported timely resolution. - Implemented approved NGFW configuration changes across source/destination objects, TCP/UDP services, security zones, schedules and allow/deny controls; validated behaviour after deployment. - Performed infrastructure and security-control health checks across NGFW, APT, NAC, EDR and logging systems, reviewing availability, interfaces, logging, configuration state and failover readiness.	
DAS-Security <i>Security Service Intern</i>	Remote / Shanghai, China Jul 2022 – Oct 2022
- Triaged security alerts across Splunk, APT, HIDS, endpoint-security and threat-intelligence platforms using HTTP, packet, IP, port and historical alert evidence. - Investigated web attacks, vulnerability-exploitation attempts and network scanning; correlated technical evidence to assess impact, severity and escalation requirements. - Supported incident containment and remediation through targeted WAF and SIEM controls, maintaining clear technical records for escalation and follow-up.	

TECHNICAL SKILLS

Programming & Automation: Python, Bash, Git, GitHub Actions, CI/CD, automated testing, deployment automation
Cloud & Infrastructure: AWS, ECS Fargate, ALB, RDS, ECR, IAM, CloudWatch, Terraform, Infrastructure as Code, Docker
Reliability & Observability: Monitoring, logging, alerting, Splunk, CloudWatch, health checks, incident investigation, service validation
Networking & Security: TCP/IP, HTTP/HTTPS, DNS, load balancing, NGFW, AWS WAF, IAM, incident response, web security

INDEPENDENT PROJECTS

Financial News Sentiment and Stock Direction Prediction

- Built a Python pilot study aligning FNSPID news headlines with yfinance prices for six US technology equities, producing 40,755 labelled samples for next-day price-direction prediction.
- Compared TF-IDF with Logistic Regression against FinBERT sentiment-label mapping using a chronological hold-out set; analysed neutral-label bias and the limitations of using sentiment as a direct price signal.

Dividend Change Prediction Prototype (in progress)

- Developing a Python prototype combining financial fundamentals with dividend-specific sentiment from publicly available disclosures, news and social media to classify dividend increases, no change or decreases.
- Initial case study: NVIDIA (NVDA). Planned deliverables include mathematical models and a demonstration website.

WebShellDetection

- Developed a machine-learning PHP web-shell detection system using Python, opcode N-grams, TF-IDF and XGBoost, with automated model tuning and evaluation.

Energy Trading Smart Contracts

- Solidity project for peer-to-peer energy trading among community prosumers, covering registration, Ether balances, recorder-controlled energy updates and supply-demand-based pricing.
- Project scope includes automated matching of energy surplus and deficit, quantity and balance validation, and consideration of allocation fairness and gas efficiency.

Deep Learning for Image Classification and Caption Generation

- Built and evaluated PyTorch CNNs on TinyImageNet30, applying data augmentation, dropout and learning-rate tuning; compared full and frozen-backbone AlexNet fine-tuning on CIFAR-10.
- Implemented an RNN image-caption decoder using ResNet features; evaluated pretrained CLIP/GPT-2 captioning models and analysed generated captions and failure cases.

PUBLICATIONS

Deep Learning for Improving Cell Segmentation and Classification in Histology Images

Robin Guo. MSc dissertation, University of Leeds, 2026.

Compared ViT-256/SAM-H backbones and HoVer-Net/CPP-Net decoders on PanNuke and 14 MoNuSeg images without fine-tuning; SAM-H showed the more consistent effect across datasets and metrics.

Dividend Change Prediction through Evidence-Grounded Cross-Source Temporal Semantics: Integrating Financial Fundamentals, Corporate Disclosures, News, and Social Media

Co-authored research draft, 2026. [Academia.edu](https://arxiv.org/abs/2601.00000)

Proposes a framework combining financial predictors with evidence-grounded semantic features and a prospective validation protocol for dividend-change classification.

ADDITIONAL INFORMATION

Open source: Contributed to CellViT on GitHub (PR #96)

Interests: Artificial intelligence, investing, financial markets and travelling