Shukai **Ni**

650-730-4795 | shukai_ni@brown.edu | 9r0x | shukai-ni

Education

Brown University — *GPA 4.0/4.0 - Providence, RI*

Data Science, M.Sc. — *Sep. 2022 - May. 2024*

- Computational Probability and Statistics, Deep Learning, Software Security and Exploitation…

Minerva University — *GPA 3.8/4.0(Top 5%) - Worldwide*

Computational Sciences & Business, B.Sc. — *Sep. 2018 - May. 2022*

- (Triple Majors) Data Science and Statistics, Applied Problem Solving, Strategic Finance
- Capital Allocation and Value Creating Growth, Global Enterprise Financial Strategy, Accounting…
- Data structure, Linear optimization, Machine learning and decision making, Bayesian statistics…

Skills

Programming Python, C, PHP, SQL, R, MatLab

Web HTML/CSS/JavaScript, React.js, Bootstrap, jQuery, Flask, Django

Tech Stacks Kernel, TensorFlow, Docker, Kubernetes, Redis, Kafka, *nix, Pandas, Scrappy

Tools MS Office, Tableau, Git, LaTeX, Jupyter, Terraform, AWS, GCP, Ansible

Languages English (Fluent), Mandarin (Native)

Tech experiences

Bank of America — *Charlotte, US*

(Intern) Corporate Audit: data automation and technology — *May. 2023 - Aug. 2023*

- Implemented audit testing coverage through streamlining protocols, leading to 25% time savings
- Visualized coverage statistics through Python and Alteryx, delivering analysis to senior directors
- Developed high-concurrency data workflows for SQL and NoSQL databases

Brown Secure Systems Lab — *Providence, US*

(Research) Per-process system call filtering and kernel development — *Jan. 2023 - PRESENT*

- Developed an advanced log-time syscall filtering application using seccomp BPF, resulting in improved system efficiency
- Customized Linux kernel 6.0.8 compilation, integrating arity-based filters for enhanced performance
- Designed versatile syscall handlers for policy-driven binaries, enabling flexibility and streamlined execution

Elle Investments — *Remote, US*

(Intern)Full stack web application development for high-performance trading data solution — *May. 2022 - Dec. 2022*

- Overhauled a low-level persistent storage saving 20% write time, 40% read time, and 45% RAM, increasing overall performance
- Addressed SQL injection vulnerabilities and restructured MVC+OOP stateless deployment framework to strengthen security measures
- Implemented a dynamic HTTP cache that increased concurrency by 1000x, significantly enhancing the overall user experience

The IBM Qiskit Quantum Computing — *Remote*

(Research) Quantum machine learning lab experiences on cutting edge models — *July 2021 - Aug. 2021*

- Investigated practical applications of Quantum Approximate Optimization Algorithm, optimizing solutions for complex problems
- Conducted in-depth analysis of Quantum Boltzmann Machines, driving advancements in data generation and quantum computing

Correlation between Fama-French factors and business cycles — *Remote*

(Research) Second-author with Dr.Arnav Sheth(MIT) on a paper about curve inversion timing strategy — *June 2021 - PRESENT*

- Developed a probit-based recession forecasting model, achieving 70% accuracy, which contributed to a 10% annualized return
- Analyzed business cycles through Fama-French factors using ex-ante and ex-post evaluation methods, confirming the model's validity

Finance Projects

Chongqing International Trust — *Wuxi, China*

(Intern)Asset management assistant for quantified financial product research — *July. 2021*

- Conducted in-depth risk assessments influenced by macroeconomic policies, optimizing investment security
- Evaluated consumer investment strategies through data-driven research, adapting to diverse economic scenarios
- Streamlined analysis and validation of Snowball derivatives employing Monte Carlo simulations for knock-in/out options, enhancing accuracy and efficiency

ESG fund voting pattern research(published) — *Remote*

Data preprocessing and analysis with Arnav Sheth and Gita Rao(MIT Sloan) — *Feb. 2021 - Mar. 2021*

- Developed a multi-threaded web crawler for extracting voting records from the SEC EDGAR database, leading to faster data acquisition and reduced processing time
- Implemented a universal data pipeline using regular expressions for accurate filtering and analysis, streamlining the data processing workflow and enhancing output quality