

RAY RUI BIAN

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PROFESSIONAL SUMMARY

Data Scientist with a Ph.D. in Computer Engineering and extensive experience in designing scalable data pipelines and developing AI-driven solutions. Proven ability to implement predictive models and optimize cloud-based infrastructures using Python, SQL, and advanced analytics tools. Demonstrated success in delivering data solutions that enhance decision-making across diverse sectors while upholding best practices in model validation and data governance.

SKILLS

- **Programming & Data Science:** Python, SQL, C, MATLAB, Java, JavaScript, Bash, Assembly Language, TensorFlow, PyTorch, scikit-learn, NLP, Generative AI, Predictive Modeling, A/B Testing, Spark, Apache Kafka, Airflow, Data Mining, SSMS
- **Cloud & DevOps:** AWS, Microsoft Azure, Google Cloud, Cloudflare, Amazon CloudFront, Docker, Kubernetes, CI/CD, Azure DevOps, FastAPI, Flask, Django
- **Databases & Visualization:** MySQL, PostgreSQL, MongoDB, NoSQL, Microsoft SQL Server, Tableau, Power BI, Seaborn, Matplotlib, ArcGIS

EXPERIENCE

Expatriate Communications | *Data Scientist*

Dec 2022 - Present

- Developed and optimized data pipelines using automation techniques, reducing data processing time by 90%.
- Directed the development of the iTAAP AI product, impacting 50+ school districts and benefiting 100,000+ students through advanced predictive modeling.
- Engineered student service tracking models, enhancing data accuracy and reporting efficiency while incorporating robust model validation practices.
- Constructed AI-powered school selection tools that aided parents in making informed education decisions by leveraging machine learning insights.
- Implemented a Python-based machine-learning chatbot to provide real-time customer support and facilitate interactive user engagement.
- Enhanced Power BI dashboards to improve data visualization and insight generation for strategic business decisions.

University of Delaware | *Research Scientist– Cybersecurity & Network Security*

Jul 2020 - Dec 2022

- Performed a large-scale analysis of over 436,000 open proxies, uncovering malicious activity in 76.42% of cases.
- Innovated detection techniques for stealthy transparent proxies, identifying emerging cybersecurity threats and bolstering network security measures.
- Authored and published research in top-tier journals and conferences, including IEEE INFOCOM, ACM SIGCOMM CCR, and Computer Networks.

University of Delaware | *Research Scientist – Internet & Cloud Security*

Jul 2017 - Jul 2020

- Developed BGP-based machine learning algorithms, achieving 90% accuracy in detecting anycast prefixes.
- Discovered that 19.2% of global anycast prefixes were affected by remote peering, leading to improved strategies for network optimization
- Conducted research on AWS EC2 network security, identifying hidden vulnerabilities in cloud routing, which informed the development of enhanced security protocols

USTC | *Research Scientist– Computer Vision & Imaging*

Sep 2012 - Jun 2015

- Developed ultralong focal length microlens arrays, resulting in new patents that advanced optical technology
- Built image reconstruction algorithms using compressed sensing and machine learning techniques, improving image clarity and processing speed
- Published multiple papers in Applied Optics and X-Ray Nanoimaging, contributing to advancements in imaging research

EDUCATION

University of Delaware | *Ph.D., Computer Engineering*

Sep 2015 - Dec 2022

USTC, China | *M.S., Techniques & Applications of Synchrotron Radiation*

Sep 2012 - Jun 2015

USTC, China | *B.E., Mechanical Engineering & Automation*

Sep 2008 - Jun 2012

PUBLICATIONS

- Silent Observers Make a Difference: Large-Scale Analysis of Transparent Proxies. IEEE INFOCOM, 2024
- Shining a Light on Dark Places: Open Proxy Ecosystem Analysis. Computer Networks, 2022
- Towards Passive Analysis of Anycast in Global Routing. ACM SIGCOMM CCR, 2019
- Ultralong Focal Length Microlens Array Fabrication. Applied Optics, 2015

AWARDS & RECOGNITION

- **2020 Teaching Assistant - U.S. Cyber Challenge Delaware Summer Camp** | Mentored 100+ students in cybersecurity techniques.
- **2017 Ranked Top 1% in SANS CyberStart Cybersecurity Competition** | 44th place out of 3,935 participants.