

Rhys Lester-Talley

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EDUCATION

Columbia University, School of Engineering and Applied Science

New York, NY

M.S. in Engineering: Computer Science, Software Systems — Expected May 2027

Columbia University, School of Engineering and Applied Science

New York, NY

B.S. in Engineering, Magna Cum Laude: Computer Science — May 2026

Cumulative GPA: 4.08 / 4.00 Tau Beta Pi • Upsilon Pi Epsilon

WORK EXPERIENCE

Software Developer Intern, IBM Corporation

Poughkeepsie, NY | 05/2025–Present

z/TPF operating system — Middleware & Security / Database

- Built middleware monitoring for remote TLS certificates within IBM's proprietary z/TPF operating system, using C, C++, and z/Architecture Assembly (HLASM).
- Fixed a defect that left shared system sockets hung until the next system IPL (restart) — often weeks apart on high-volume clients — by tracking each socket's address in ECB storage and releasing any still held at ECB exit.
- Redesigned the TLS certificate monitor for the IRS, whose 70,000+ daily login connections far exceeded its 1,000-entry capacity, adding a user exit that lets clients filter out certificate ranges they don't need to monitor.
- Received and deferred a full-time return offer to pursue an M.S., continuing as an intern.

Software Engineering Intern, Columbia Build Labs

New York, NY | 09/2024–05/2025

AMLAH — early-stage real-estate startup (remotely guided tours)

- Designed data models, database schemas, and RESTful APIs for backend scheduling and inventory systems.
- Built logic to manage and optimize remote-tour scheduling, agent availability, and inventory.

Teaching Assistant, Computer Science, Columbia University

New York, NY | 01/2024–Present

- TA across four courses for three professors: Intro to Java, Data Structures, Advanced C, and Design with C++.
- Developed grading rubrics and frameworks in Pygrader; designed exam questions, assignments, and course projects.
- Supported 1,000+ students through office hours and online discussion forums on core concepts and coding best practices.

Research Intern, DitecT Lab, Columbia University

New York, NY | 02/2024–09/2024

- Extended an existing codebase on the WayCARE project (Prof. Xuan Di) to deploy and update a full-stack weather-data dashboard.

SKILLS

Languages: C, C++, Java, Python, SQL, Assembly (x86, MIPS, z/Architecture HLASM)

Systems & Tools: z/TPF, TPFDF, TPF Toolkit, Git

PROJECTS

Remote TLS Certificate Expiration Monitor — C, C++, HLASM, z/TPF

- Built compliance tooling to store and monitor remote TLS certificates for large clients including Visa, Amtrak, and the IRS.
- Captured client/server certificates after the TLS handshake into a hashmap in system heap memory.
- Added an operator command to list stored certificates and expiry dates; a daily sweep routes certificates nearing expiry to a client-defined user exit for custom handling.

Parallel I/O and Compression Migration — C, C++, TPFDF, CRUISE

- Designed a migration routine converting a hierarchical, record-oriented TPFDF database into an indexed, compressed structure, improving read times by up to 96%.
- Reused existing CRUISE architecture and DF APIs to minimize code duplication; added a fallback path for safe rollback during migration.

INTERESTS

OS and systems programming, video games, weightlifting, soccer, fantasy novels.