Stanley Yang

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Education

University of Washington, Seattle, WA *Sept 2022 - June 2026*
Bachelor of Science in Computer Science, Major GPA 3.94/4.00

- **Coursework:** Software Design, Data Structure, Database, Machine Learning, Two-Year Honor Math Series
- **Award:** UW ICPC Winter Programming Contest 2024 - Second Place

Experience

Applied Scientist Intern *Shanghai, China*
Amazon AI Lab *June 2024 – Sept 2024*

- Enhanced **Deep Graph Library** with bug fixes, performance optimizations, and automated pipelines
- Implemented reverse edge feature to graph training datasets, boosting node classification accuracy by **16%**
- Improved CSC graph neighbor sampling efficiency by **6.5%** via backend **PyTorch** operator optimization
- Built a **Docker-based release pipeline**, incorporating **unit tests** and daily **regression framework**
- Integrated version update automation and **AWS S3 deployment** for efficient wheel distribution

Teaching Assistant *Seattle, WA*
Paul G. Allen School of Computer Science & Engineering *March 2023 - Present*

- Led course on **functional programming**, type systems and interpreter design using **OCaml** and **Racket**
- Developed **autograder scripts** with **700+ test cases** and led **infrastructure development**
- Assisted professors in homework design, created rubrics, and coordinated TA grading for **600+ assignments**
- Co-taught a guest lecture on "**Static vs. Dynamic Typing**" with head TA

Database Research Assistant *Seattle, WA*
UW PLSE (Programming Languages and Software Engineering) Lab *June 2023 – Aug 2024*

- Optimized processing of **400+ million** data points using **SQLite**, executing **16,000+** queries
- Developed **automated pipeline** using **bash scripts** to streamline query analysis and data cleaning processes
- Investigated SQL table equivalences, inspiring a popular blog post with **272 upvotes on Hacker News**
- Analyzed SQL null-value handling, proposing a "column normal form" to mitigate unintended side effects

Projects

Scotty3D: a 3D modeling, rendering and animation package *Sept 2024 - Dec 2024*

- Developed a **software rasterization pipeline** for GPU-independent preview renders, using **OpenGL**
- Designed interactive mesh editing tools using a **halfedge data structure**, enabling efficient topology changes
- Built a **path-tracing renderer** with efficient ray-scene intersection queries and realistic light simulation
- Implemented an **animation system** with skeletal animation, linear-blend skinning, and particle simulation

CaCL (Change and Chance Language) Interpreter & Compiler ' *Jan 2024 - March 2024*

- Built a comprehensive interpreter supporting template expansions, mutations, and diverse data types
- Implemented parallel let expressions and boolean shortcuts to enhance efficiency and logic flow
- Added support for **reverse-mode automatic differentiation**, essential for **machine learning** applications
- Integrated **probability distributions and sampling methods** for advanced statistical modeling
- Authored **1,300+ lines of tests** to validate functionality and ensure robust error-handling

Skills

Languages: Java, C/C++, Python, Shell, JavaScript, SQL, OCaml, Racket, Ruby, LaTeX, MATLAB

Frameworks: PyTorch, NumPy, Docker, JUnit, ReactJS, Java Spark, Java Swing, DGL, Figma, AWS, DuckDB