Serena Huang

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EDUCATION

Parkway Central High School **Chesterfield, MO**

High School Diploma | **GPA:** 4.769/4.0 | **ACT:** 36/36 | **SAT:** 1560/1600 *Expected May 2026*

- **Honors & Awards:** NCWIT Aspirations in Computing National Honorable Mention & Affiliate Winner, USACO Silver Division Competitor, National STEM Festival Finalist, 3x 1st Place Winner in the Congressional App Challenge, Girls Who Code Scholar

RELEVANT EXPERIENCE

NASA & UT Austin's Center for Space Research **Austin, TX**

Aerospace Research Intern *May 2024 - Aug 2024*

- Selected as 1 of 50 rising juniors in the nation for the STEM Enhancement in Earth Science (SEES) internship
- Applied k-means clustering and cosine similarity (Python, NumPy) to classify lunar regolith composition, identifying optimal materials for in-situ resource utilization and supporting Artemis mission goals
- Processed NASA spectral datasets to model star distributions and temperature trends in Andromeda (Matplotlib)
- Authored a proposal on the effects of astronaut drugs on brain organoids in Zero-G for future research on parabolic flights
- Invited to present at the American Geophysical Union's 2024 Annual Fall Meeting (Bright STaRs program)

Ariel Premium Supply **St. Louis, MO**

Software Engineer Intern *Jun 2023 - Aug 2023*

- Trained an EfficientNet-based CNN in PyTorch on 10K+ trademark images from the USPTO's Trademark Status & Document Retrieval API using transfer learning for clustering and classification
- Integrated trained model into a React Native app with optical character recognition (OCR) to streamline visual search

Software Engineer Intern *Jun 2022 - Aug 2022*

- Built a data pipeline using Selenium (Python) and Linux cron jobs to automatically scrape 600+ client records daily, eliminating 15+ hours per week of manual search time and saving $12K+ annually in business costs
- Developed a spaCy-based NLP pipeline to redact sensitive information from PDFs, text, and images, improving legal compliance

PROJECTS

AI Hydrological Modeling Research | PyTorch, Pandas, Matplotlib github.com/serenahuang225/transformer-hydro-model

- Developed Transformer models and custom data loaders for rainfall prediction on the CAMELS dataset (531 basins, 20-40 years, vegetation/topography/soil), achieving NSE=0.764 and outperforming LSTMs by 6% ("Very Good")
- Trained models on single- and multi-basin datasets to benchmark generalization, then created relevant visualizations
- Selected as a semifinalist in Academy of Science St. Louis K-12 Science Fair Honors Division

Neural Painting Style Transfer App | PyTorch, Flask, HTML/CSS github.com/serenahuang225/famous-painting-stylizer

- Built style transfer system using PyTorch U-Net with residual layers and instance normalization to train 5 custom CNN models
- Deployed a Flask web app with drag-and-drop image uploads (HTML5 File API), real-time previews (Canvas API), and style selector using CSS-grid overlays with @media queries for responsiveness

Mock Operating System | C++ github.com/serenahuang225/mockos

- Implemented core operations (create/read/write/delete) using abstract base classes (AbstractFile) and concrete types (TextFile, ImageFile), and packaged as a static library using CMake with clean include/lib separation

Reddit Data Pipeline | Airflow, Snowflake, SQL

- Designed DAGs to scrape and process Reddit data, and built signal tables for downstream analytics and dashboards

Lively: Planner and Journal App | React Native, Express.js, Firebase, Figma bubblystudios.com/lively

- Created Lively, a cross-platform productivity app that allows users to connect with friends and create personalized calendars, to-do lists, and journal entries with real-time notifications and friend syncing
- Placed 1st in the 2023 Congressional App Challenge, achieving 800+ iOS app downloads and 10K+ monthly interactions

LEADERSHIP & EXTRACURRICULARS

Parkway Central High Speech & Debate Team **Chesterfield, MO**

Team Captain, Varsity LD Debater & Oratory Speaker *Aug 2022 - Present*

- Coordinated a round-robin tournament with 350+ participants across the Greater St. Louis area with a team of 8 other students
- Conducted in-depth research on the moral and philosophical implications of various policy issues to prepare for competitive debates, and coached a team of 10+ students through rigorous weekly practices

Stanford University **Stanford, CA (Remote)**

Code in Place Program Section Leader *Apr 2025 - Jun 2025*

- Selected from a competitive pool to teach Stanford's CS106A and Python fundamentals to a global cohort of 20K learners
- Led discussion sections, provided code feedback, and supported students 1:1 to learn programming and problem-solving

TECHNICAL SKILLS & CERTIFICATIONS

Languages: Python, Java, C++, R, SQL, JavaScript, Swift, C, HTML/CSS
Frameworks & Technologies: PyTorch, TensorFlow, Scikit-Learn, Keras, Pandas, NumPy, Matplotlib, Seaborn, React, Tableau, Git
Certifications: Machine Learning & Intro to Statistical Learning (Stanford Online), CS50's Intro to Computer Science (HarvardX)