Brian Seo

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EDUCATION:

Princeton University: ***May 2027***
Bachelor of Science in Engineering: *Computer Science* | **GPA:** 3.51
- **Relevant Coursework:** Data Structures and Algorithms; Introduction to Programming Systems; Physics: E&M/Photonics; Linear Algebra; Physics: Mechanics; Multivariable Calculus; Contemporary Logic Design; Analog Photography

Los Angeles Senior High School: ***June 2023***
- **Weighted GPA:** 4.25 | **Unweighted GPA:** 4.00 | **Class Rank:** 1 / 196
- **Extracurriculars:** Mathematics, Engineering, Science, Achievement (MESA), Salvadoran-American Leadership and Educational Funds (SALEF), Cybersecurity Cisco, First Tech Challenge Robotics Club, Academic Decathlon, Peer Counseling

EXPERIENCE:

Princeton Vision and Learning Lab - *Computer Vision Research; Princeton, NJ* ***Jul 2024 - Present***
- Created a 360-degree rotational video generator within Infinigen, providing richer training data for object recognition and scene understanding by optimizing the system to seamlessly generate smooth, continuous rotational sequences of 3D scenes
- Developed and utilized the Infinigen project, a procedural 3D scene generator that produces diverse high-quality 3D training data optimized to advance computer vision, automated reasoning, and object/action recognition research under professor Jia Deng

Gractor - *AI/ML Research Intern; Seoul, South Korea* ***Jun 2024 - Aug 2024***
- Researched about the application of Edge AI in Internet of Things Technology to prevent neighborhood noises in South Korea and utilized Convolutional Neural Networks to perform audio classification, organizing findings in a 70 page research report
- Utilized PyTorch to apply and evaluate classification models like ResNet, EfficientNet, and DenseNet, in addition to other CNN techniques such as data preprocessing, model training, optimization to improve the robustness of the audio classification model

Prodigy Tutorial Program - *Coding Instructor; Virtual* ***Apr 2023 - Present***
- Led over 70 hours of virtual, hands-on learning experiences, guiding students in developing essential core programming skills. Taught Python and Scratch through interactive projects that fostered creativity, problem-solving, and project planning
- Developed and implemented a comprehensive, innovative Python curriculum, meticulously designed to empower students' critical thinking and application of programming in real-life scenarios, such as building calculators for fundamental mathematics

Robotics: First Tech Challenge - *President/Programming Chair; Los Angeles, CA* ***Aug 2021 - June 2023***
- Instructed and expertly guided the programming committee utilizing On-bot Java as the head programming chair, communicating with the drivers team and strategically formulating plans, specifically for REV Robotics applications
- Mentored strategy organizers in understanding game rules, developing effective game strategies through active communication with the programming team, and coordinating team efforts by analyzing the team's robot drivers and the opponents

PROJECTS:

Seam Carving (Java: Algorithm Development):
- Developed an image resizing algorithm dynamically removing or adding seams by calculating the minimum-energy seam with quantified image pixels without distorting key visual features, allowing efficient content-aware scaling and image optimization

K-D Tree Implementation/Analysis (Java: Machine Learning Algorithm Optimization):
- Utilized 2-d trees to create a symbol-table data type, efficiently performing k nearest-neighbor and range search with 2-d points and optimized the time complexity from O(n) to O(log n), significantly improving performance in high-dimensional datasets

LEADERSHIP:

Mathematics, Engineering, Science, Achievement - *President/Vice-President; Los Angeles, CA* **Aug 2019 - June 2023**
- Facilitated social events and actively communicated with the school's vice principal to manage the club funds and fund raise for competitions, raising over $5000 for the club. Increased the member count by 500% through active outreach
- Participated in and organized 30+ members into groups for the JPL competition, International Bridge Competition, and the official MESA competition, conducting weekly meetings and individual communications

Salvadoran-American Leadership and Educational Funds - *Secretary/Vice-President* **Jan 2021 - June 2023**
- Thoroughly researched and systematically tracked the available resources of 100+ community service centers in Google Sheets, such as food and shelter suppliers to arrange professional calls and outreach to the homeless community in Los Angeles

SKILLS:

Languages: Korean, Spanish, Chinese, English | **Programming Languages:** Java, C/C++, Python, R | **Developer Tools:** MATLAB, PyTorch
Test Scores: SAT II Korean - 800/800, TOPIK I (Korean) - 200/200, HSK Level 4 - Pass | **Interests:** AI/ML, Finance, Teaching
Certificates: HarvardX - Statistics and R (Credential: courses.edx.org/certificates/38e846d101dd4898a9a932c4b05f9cb0)