William Kim

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Education

NYU Courant — New York, NY
MS Computer Science — *2025 – May 2027*
Relevant Coursework: Machine Learning, Computer Vision, Parallel Algorithms, Operating Systems, Compilers

Columbia University — New York, NY
BS Applied Physics — *2021 – 2023*

Bard College at Simon's Rock — Great Barrington, MA
BA Engineering — *2018 – 2021*

Projects

Bipedal Robot | *Python, PyBullet, SolidWorks · writeup · video* — *2023 – 2024, 2026*

- Designed and built a 35 cm, 8-servo biped from scratch (SolidWorks, 3D-printed PLA, Raspberry Pi 4); exported the CAD model as a URDF so the simulator used the robot's real masses and inertias.
- Optimized a 7-parameter gait with a hill climber in PyBullet, raising real walking speed 20% (0.35 to 0.42 cm/s).
- In 2026, traced noisy optimizer scores to two evaluation-loop bugs (a mid-air spawn, an incomplete reset); with both fixed and each gait scored by its worst-case start, the same optimizer found a 5 cm/s gait in simulation.

MaPLe Parallel Compiler (open source) | *C · merged PR* — *2026*

- Fixed a runtime crash under GCC 16: C functions returning a 1-byte `bool` were read by Standard ML as 4 bytes, so stale register bytes turned false into true and programs aborted once the scheduler promoted work.

Parallel LZ77 Compression | *Standard ML (MaPLe)* — *2026*

- Building a parallel greedy LZ77 factorizer for a 60-core server, with a sequential baseline for measuring speedup and round-trip decoding as the correctness check.

Robustness of Small AI-Generated-Image Detectors | *Python, PyTorch, timm* — *2026*

- Designed a study of how small a ConvNeXt V2 detector (3.7M–89M parameters) can get before it fails on compressed images and unseen generators, and how much of that loss distillation recovers.
- Building the 50K-image training-data pipeline and the distillation stage (teacher logits, student training).

Work Experience

Neo Cybernetica — Bedford, NH
Robotics Intern — *Jul – Aug 2025, May – Aug 2026*

- Teleoperated robot arms to record demonstrations (cube stacking, sorting) for policy training; ran training.
- Modeled and load-tested 7 structural robot parts in Fusion, cutting their weight 20% within load tolerances.
- Moved and enlarged a chassis vent that sat away from the heat source; the redesigned part went into use.
- Set up 3 robot arm assembly lines end to end: layout, build manuals, QC tests, and every workstation.

WWC, P.C. — New York, NY
Project Officer — *Mar 2024 – Aug 2024*

- Generated mock financial data and audit assertions in Python (pandas) for an audit assistant app prototype.
- Designed the app's UI/UX in Figma, turning dense audit guidelines into branching user workflows.

Columbia University Center for Neural Engineering and Computation — New York, NY
Research Assistant — *May 2023 – Mar 2024*

- Turned ∼800 facial scans with broken mesh geometry into printable STL files and ran the lab's resin 3D printer, for Prof. Nanfang Yu's research on metasurface-based facial recognition.

Skills

Programming: Python, C, C++, Java, OCaml, Standard ML, MATLAB, SQL
Tools: PyTorch, PyBullet, Docker, Git, SolidWorks, Autodesk Fusion
Spoken: English (fluent), Korean (fluent), Spanish (basic)