Max Paik

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Education

New York University
New York City, New York, September 2023 – May 2028
Doctor of Philosophy, Computer Science

Northwestern University
Evanston, Illinois, September 2019 – June 2023
Bachelor of Arts, Summa Cum Laude, Double Major in Computer Science and Physics
Cumulative GPA: 4.0/4.0

Honors and Awards

- MacCracken Fellowship, Awarded, 2023 – 2028
- Phi Beta Kappa, Inducted to National Honor Society, 2023
- Gates Cambridge Scholarship Nominee, 2023
- Sigma Pi Sigma, Inducted to National Physics and Astronomy Honor Society, 2022
- Northwestern University Dean's List, 2019 – 2023
- California State Seal of Biliteracy (Spanish), 2019

Research Experience

***Research Assistant,* Geometric Computing Lab**
New York University, Sep. 2023 – Present
- Develop novel methods for physical simulation in a variety of domains, from cellular wound closure to solid mechanics.

***Researcher,* Center for Interdisciplinary Exploration and Research in Astrophysics**
Northwestern University, Mar. 2021 – Present
- Run and analyze cutting-edge, GPU-accelerated general relativistic magnetohydrodynamic simulations of relativistic jets and supermassive black holes using Oak Ridge National Laboratory's High Performance Computer Clusters.

***Research Assistant,* Driscoll Lab**
Northwestern University, Jan. 2020 – Jun. 2021
- Developed an independent research project using a microscope and computational methods to image fracturing colloidal droplets.

Publications

Huang Z, **Paik M**, Ferguson Z, Panozzo D, Zorin D. ***"Orientation-aware Incremental Potential Contact,"***
Submitted for publication. 2024.

Rohoza V, Lalakos A, **Paik M**, Chatterjee K, Liska M, Tchekhovskoy S, Gottlieb O. ***"How to turn Jets into Cylinders near Supermassive Black Holes in 3D GRMHD Simulations,"*** Submitted for publication. 2023.

Paik M, Rohoza V, Lalakos A, Chatterjee K, Tchekhovskoy S, Liska M. ***"Shaping Jets with the Ambient Medium,"*** Growing Black Holes: Accretion and Mergers 2022, Kathmandu, Nepal.

Rohoza V, **Paik M**, Lalakos A, Chatterjee K, Tchekhovskoy S, Liska M. ***"How to Turn Jets into Cylinders,"*** Growing Black Holes: Accretion and Mergers 2022, Kathmandu, Nepal.

Seper BC, Arora S, **Paik M**, Driscoll M. ***"Dimples and Voids in Dense Drying Drops,"*** American Physical Society March Meeting 2022, Chicago, Illinois.

Seper BC, Arora S, **Paik M**, Driscoll M. ***"Drying Colloidal Suspensions: Simple Patterns and Complex Flows,"*** American Physical Society Division of Fluid Dynamics (Fall) 2021.

Paik M, Driscoll M. ***"Computer Vision Algorithms for Analyzing Drying Colloidal Suspensions,"*** Northwestern Undergraduate Research Exposition 2021 (Poster).

Grants Awarded

"Relativistic Jet Formation Around Black Holes," Illinois Space Grant, awarded by the Illinois Space Grant Consortium, 2021.

"Relativistic Jets," Baker Award, awarded by the Weinberg College of Arts and Sciences, 2021.

"Drying Colloidal Droplets," Summer Undergraduate Research Grant, awarded by the Northwestern Office of Undergraduate Research, 2020.

"Drying Colloidal Droplets," Academic Year Undergraduate Research Grant, awarded by the Northwestern Office of Undergraduate Research, 2020.

Relevant Work Experience

***Software Developer Intern*, Caterpillar Inc.**
Chicago, Illinois, Jun. 2022 – Oct. 2022

- Developed solutions to allow live and asynchronous network communication between central servers and Internet of Things (IoT) devices.

***Machine Learning Intern,* Sirona Medical**
San Francisco, California, June 2019 – Sept. 2019

- Developed and customized medical image visualization tool with features such as displaying formatted metadata, volume rendering, and loading in images chosen through a custom hdf5 browser.

***Youth Learning and Outreach Intern,* Half Moon Bay Library**
Half Moon Bay, California, May 2018 – June 2019

- Arranged events in Makerspace creating and printing 3D models, including a 3D selfie photo session.

***Reporter,* Half Moon Bay Review**
Half Moon Bay, California, Feb. 2017 – Jan. 2019

- Collaborated with town paper's editorial staff; discovered, developed, researched, and pitched stories before writing weekly articles covering local sports, events, and programs, consistently meeting deadlines.

Community Involvement

***Peer Mentor, Data Structures, Systems, and Programming Languages,* Department of Computer Science**
Northwestern University, Winter 2021, Spring 2021, Fall 2021, Winter 2022, Spring 2022

- Led office hours, distribute assignments, and grade exams.

***Secretary and Maker's Division Lead,* Robotics Club**
Northwestern University, Sept. 2019 – Present

- As a part of the Lacrosse Goalie Project, develop original code to track a ball's position and velocity while predicting its flight path in real time using only a single camera.

***Team Co-lead and Finalist*, McCormick Engineering School Design-A-Thon**
Northwestern University, Sept. 2020

- Co-led a team of six in design competition focused on creating community during COVID-19.

***Campus/City Reporter,* The Daily Northwestern**
Northwestern University, Sept. 2019 – Jan. 2020

- Reported on local events such as artist markets for Northwestern's premier paper.

***Prose Staff,* Helicon**
Northwestern University, Sept. 2019 – Jan. 2020

- Reviewed and edited submissions for Northwestern's literary magazine.

Skills

Technical: C, C++, Java, JavaScript, Python, Racket, SQL. AWS, Azure DevOps, Git. HAMR, NumPy, Matplotlib, PyTorch, OpenCV, scikit-image. Agile Development, Cloud Computing, Command Line, Compiler Construction, High Performance Computing, Image Processing, Machine Learning, Networking, Numerical Methods, Parallel Programming, Physics-Based Simulation, Researching, Statistics, Unix.

Communication: Active Communicator, Article Writing, Interviewing, Journalist, Nationally Published Author, Public Speaking, Fluent in Spanish.

Leadership: Attention to Detail, Creativity, Initiative, Patience, Positivity, Reliability, Self-Starter, Teachability.