

JOSHUA SHUNK

480-489-2772 ■ jshunk@stanford.edu

EDUCATION

Perry High School, 1919 E Queen Creek Rd, Gilbert, AZ 85297

Graduation Date: May 2023

Perry High School is a public high school located in Gilbert, Arizona, and the 4th high school built by Chandler Unified School District. Perry High School is the only high school in the CUSD district with a dedicated STEM program.

GPA: 4.87

Class Rank: 1/761

Stanford University, 450 Serra Mall, Stanford, CA 94305

Graduation Date: June 2027

Stanford University is a prestigious private research institution located in California, known for its world-class academics, cutting-edge research, and stunning campus nestled in the heart of Silicon Valley. With a legacy of innovation and excellence spanning over a century, Stanford continues to cultivate bright minds and foster interdisciplinary collaboration to address global challenges.

Major: Computer Science

RESEARCH

Independent and School Sponsored Honors Science Research - *Researcher, Computer Science*

August 2019 - May 2023

- Worked on my own research projects as well as helped others with their own science fair projects to better Perry's reputation as a research school.

Neuron-Specific Dropout: A Deterministic Regularization Technique to Prevent Neural Networks from Overfitting & Reduce Dependence on Large Training Samples - *Published Paper, January 2022 on ArXiv, Cornell University*

Synopsis: In order to develop complex relationships between their inputs and outputs, deep neural networks train and adjust a large number of parameters. To make these networks work at high accuracy, vast amounts of data are needed. Sometimes, however, the quantity of data needed is not present or obtainable for training. Neuron-specific dropout (NSDropout) is a tool to address this problem. NSDropout looks at both the training pass and validation pass of a layer in a model.

Independent Research at MIT CSAIL (Computer Science and Artificial Intelligence Lab) - *Researcher, Computer Science*

January 2022 - March 2023

- Worked with postdoctoral research Dr. Ben Lengerich on further developing Neuron-specific dropout.

WORK

Research Intern - *Arizona Science Center*

June 2023 - September 2023

Throughout my time at the science center, I worked on using innovative technologies to further the science center's mission of promoting science to the Arizona population. I worked on projects including:

- Developing initial drafts and research of a new water atrium exhibit to be implemented in late 2024 early 2025.
- Developing custom software for managing guests and volunteers during a future world record attempt at the largest human-made atom.
- Developing an AI ticketing robot using NLU and the furhat robotics SDK to allow for contactless ticketing while engaging and learning about AI. ([GitHub Repository](#))
- Developing hand-tracking software to allow for hands-free control of Google Earth using an ultrasonic motion sensor. ([GitHub Repository](#))
- Using API calls to link ticketing software to a dashboard tool like Google Looker Studio.

JOSHUA SHUNK

480-489-2772 ■ jshunk@stanford.edu

SKILLS

- **Python:** Programming in Python for 3+ years. Worked with an emphasis on data science and machine learning, but am familiar with other applications of Python, including software development.
 - Ex: joshuashunk.pythonanywhere.com Created this website entirely with python, CSS, JAVA, and HTML. Web application for doctors to detect and differentiate COVID-19 pneumonia and Bacterial pneumonia. Username: test@test.com Password: 1234567
- **Machine Learning:** 3+ years of machine learning with an emphasis on image recognition algorithms. Worked with MIT CSAIL on developing Neuron-specific dropout.
- **JAVA:** IT Specialist Java certified ([JAVA Certification](#)). Completed multiple projects in JAVA.
- **C++:** Fluency in C++ programming language
- **Web Development/Full Stack Engineering:** Worked on the construction and publication of multiple websites, including a website that used machine learning to detect COVID and bacterial pneumonia in chest X-rays ([website](#)). Username: test@test.com Password: 1234567

AWARDS - REGIONAL AND NATIONAL

September 2022 - **National Merit Finalist**, *National Merit Scholarship Corporation*

May 2022 - [Arizona State University ISEF Scholarship](#), *Arizona State University*

May 2022 - [Dudley R. Herschbach SIYSS Award](#), *Regeneron International Science and Engineering Fair & Stockholm International Youth Science Seminar*

May 2022 - [First Award Robotics and Intelligent Machines](#), *Regeneron International Science and Engineering Fair & Segel Family Endowment*

May 2022 - [National Security Agency Research Directorate](#), *National Security Agency*

February 2023 - [Finalist in the Regeneron Science Talent Search](#), *Society for Science and Regeneron*

News: [Gilbert Sun News](#), [Chandler Unified School District](#)

LICENSES/CERTIFICATIONS

IT Specialist - Java, Certiport - A Pearson VUE Business, Issued May 2022

EXTRA-CURRICULAR ACTIVITIES

Association for Computing Machinery, Stanford University - *Member*

- Active member on of the Stanford ACM. Working on Safe Biomedical Natural Language Inference for Clinical Trials.

ATHLETICS

Defence, Stanford University Club Hockey

American Collegiate Hockey Association

- Starting defenceman on the Stanford University D2 Club Ice Hockey Team.

Captain of Varsity Division 1 Team, Basha-Perry Hockey

Arizona High School Hockey Association

GRADES: 9, 10, 11, 12

- Only freshman to play varsity D1. Received multiple recognitions for my dedication to hockey and academics.
- All-Academic Team - Arizona High School Hockey Association, sophomore and junior year

Alternate Captain - Defenseman, USA Hockey

GRADES: 9, 10, 11

Played for two different organizations and competed at the USA Hockey National Championships against some of the top teams in the country.

- 2021 USA Hockey National Championships sophomore year