Kyle Yee

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EDUCATION

Swarthmore College, *Swarthmore, PA* Class of 2019

- Candidate for B.A. in Computer Science and Physics, minor in Mathematics GPA: 3.84/4
  Relevant Coursework: Machine Learning, Artificial Intelligence, Complex Analysis, Real Analysis, Modern Algebra, Data Structures and Algorithms (C++), Computer Systems, Multivariate Calculus, Linear Algebra, Analytical Dynamics, Electricity & Magnetism, Quantum Mechanics, Mathematical Methods
- *Freeman Scholar*: Given by the music faculty to students who show unusual promise as instrumentalists or vocalists, providing a complete scholarship for musical instruction

WORK AND RESEARCH EXPERIENCE

REU in Machine Learning, *University of Colorado at Colorado Spring* Summer 2017

- Conducting computer vision research under the guidance of Dr. Jonathan Ventura, VAST Lab
- Using convolutional neural networks to localize fluorescent proteins at scales beyond the limits of optical instruments
- Working with Keras and Tensorflow machine learning frameworks
- Independently designing and executing experiments to optimize the machine learning model
- Incorporating novel methods such as subpixel super-resolution convolutional layers to improve results
- Intending to submit for publishing as a first author in Spring 2018

Physics Research Assistant, *Swarthmore College* Summer 2016

- Conducted early-universe cosmology research with Dr. Tristan L. Smith
- Used cosmological models to construct theoretical predictions about the Cosmic Microwave Background power spectrum
- Improved upon the Linear Perturbation Theory to incorporate Compensated Isocurvature Perturbations
- Implemented and modified programs (CAMB and CosmoMC) to test theory against data

Physics Teaching Assistant, *Swarthmore College* Fall 2017 - Present

- Runs help sessions for students currently enrolled in introductory mechanics

PROJECTS

Mindful, *PennApps XV* January 2017

- Built an iOS keyboard which passively logs keyboard input and sends this data to an accompanying web app
- Implemented Alchemy API via Node.js to run sentiment analysis on this text and construct aggregate emotion data
- Displayed this information on the web app using chart.js, creating easily readable graphs in real time

Hacker Vision, *Hack Princeton* November 2016

- Won Best VR/AR Hack
- Implemented an AR facial recognition hack which displays user profiles on a camera feed over recognized faces
- Built on a Raspberry Pi with Pi Camera using Microsoft Cognitive Services API
- Incorporated web tool to enter users and information into database

SKILLS

Proficiency in Python, C++, Unix environments; Familiarity in HTML, CSS, C, Javascript
Proficiency in French; Basic Mandarin

INTERESTS

Cello: Orchestra, Chamber Music, Private Lessons, Music Theory Classes Fall 2015 – Present
Principal Cello, Swarthmore *College Orchestra* 12 hours per week

- Leads cello section by cueing entrances, providing fingerings and bowings, and relaying instructions from the conductor

Loves reading science fiction novels, building mechanical keyboards, road biking, and playing Ultimate Frisbee