Avi Vajpeyi

Contact
+61 432 794 442
avi.vajpeyi@gmail.com
avi.vajpeyi

Programming
C/C++, Obj-C, C#
Python, Unity, Java
Matlab, OpenCL, SQL
Mathematica

Recent Courses Taught
• Algorithms and programming foundations in Python
• Fundamentals of C++

Conferences Presented At
March 2018 APS
2017 MCURCSM
Fall 2017 OSAPS
Spring 2017 CCSCNE
March 2016 APS

Other Interests
DIII Varsity Track
Rock Climbing
Taekwondo
Puerto Rican Salsa
Video-game Design

Competitions
OH/IO Hackathon
Ludum Dare 41-47
ASA DataFest
ACM, MCM, UPC

Links
github.com/avivajpeyi
unity.com/avivajpeyi
linkedin.com/in/vajpeyi
avivajpeyi.itch.io/

Education

04/19–Now	**Ph.D., Astrophysics**	Monash University
08/14–05/18	**B.A. Physics and Computer Science, Honours**	The College of Wooster
	Cumulative GPA: 4.0, *Summa Cum Laude*	

Research

04/19-Now	**Ph.D., Thesis: A high mass black hole search**	Monash University
	A Bayesian search to find high mass black holes in LIGO data	
08/17-05/18	**Thesis: Studying Universality with Physics Engines**	The College of Wooster
	Accelerating granular flow on GPUs with OpenCL & CUDA	
01/16–05/16	**Independent Research: Chaotic Scattering in a Complex Topography**	
	Discovered a new valley-system exhibiting chaotic scattering with a custom made simulation. Awarded 'Best Paper Presentation' at MCURCSM '17.	
06/17–08/17	**NSF Physics Research: r-mode Gravitational Waves**	Sapienza University
	Created 2D-FFT filters to enhance simulated r-mode gravitational waves and developed a CNN to perform parameter estimation.	
02/17–05/17	**Junior Research: Quantum Memory**	The College of Wooster
	Developed theory to model the geometric phase of light	
06/16–08/16	**LIGO Undergrad Research: Binary Black Hole Detection**	LIGO Caltech
	Calculated Bayes Factors for simulated signals, noise and foreground events in LIGO strain data [Phys. Rev. D 98, 042007 (2018)]	
06/15–06/16	**NSF Physics Research: Avalanching Bead Piles**	The College of Wooster
	Analysed bead-avalanches in a lab experiment with motion tracking	

Industry Experience

08/18-03/19	**Software Engineer Consultant**	Bamboo Learning
	Programmed Alexa skills to teach kids math and listening comprehension.	
06/18-08/18	**Galaxy Classification with Deep Learning and EIFIGI Data**	MOAD
	Developed a galaxy classifier with TensorFlow. Trained on Google Cloud.	
08/16–02/17	**Software Engineering Assistant: GitKeeper**	The College of Wooster
	Created python scripts for an automated grading system	

Hackathon Awards

02/19–04/19	**Facebook Dev Challenge: Glass Runner**	
	Programmed a videogame for FB. Awarded the best solution regional prize in the Asia Pacific region.	
06/18–07/18	**Google I/O Extended Bronx: Action Development**	
	Developed a Google Action with Dialogflow. Won the 1st place at Google I/O Extended Hackathon, Bronx, NY.	
03/17-03/17	**HackOH5: College Newspaper 3D Visualisation**	
	Created vector representations of newspaper text (1970-2010) with Tensor-Flow embeddings, demonstrating semantic change. Awarded 1st place.	

Additional Information

• Student speaker at the College of Wooster 2018 commencement
• 7 academic and 2 athletic awards, 2 honour societies, teaching aide for 8 courses