Jonathan Valverde

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EDUCATION

University of Maryland (UMD), College Park, MD   2022

M.S. in Computer Science

Master's Scholarly Paper: Maximizing User Engagement in Social Network Advertising

Princeton University, Princeton, NJ   2016

B.S.E. in Mechanical and Aerospace Engineering, magna cum laude

Certificates (Minors): *Applications of Computing, Robotics and Intelligent Systems*

Senior Thesis: Exploring Multi-Armed Bandit Decision-Making Strategies in an Underwater Vehicle Testbed

PROFESSIONAL EXPERIENCE

Google, Mountain View, CA   2022-Present
Machine Learning Software Engineer – Google DeepMind (formerly Brain)
- Perform research on recommender systems.

Abacus.AI, San Francisco, CA (Remote)   2022
Research Science Intern
- Performed research on metalearning and recommender systems.

Amazon, Seattle, WA (Remote)   Summer 2020, Summer 2021
Applied Scientist Intern – Prime Video Recommendations
- Leveraged deep learning and recommendation algorithms in two research projects: ranking of content on the Prime Video homepage (2021) and modeling of item similarity with multi-modal data (2020). Outperformed baseline methods.
- Processed datasets on the order of 10,000 items and 1,000,000 impressions.
- Proposed, implemented, and tested alternate solutions to baseline algorithms by surveying literature and performing experiments using AWS platforms.
- Developed modular, re-usable codebases. Revised them through code reviews.
- Presented results in final papers and oral presentations.

Intelligent Automation Inc. (IAI), Rockville, MD   2017-2020
Research Engineer
- Conducted experiments, performed analyses, and developed code in support of multiple research projects involving machine learning, deep learning, and data analysis.
- Presented work to government clients in written reports and periodic briefings.
- Projects included: a convolutional neural network for image recognition in non-visual spectrum, an automatic speech recognition module, and a machine learning classifier for detection of automated social media accounts.

CORE COMPETENCIES

Programming Languages: Python, Java, C, MATLAB
Python Libraries: PyTorch, Keras, TensorFlow, Scikit-learn, Pandas, NumPy

PUBLICATIONS

Duncan C. McElfresh*, Sujay Khandagale*, **Jonathan Valverde***, John P. Dickerson, Colin White. On the Generalizability and Predictability of Recommender Systems. In *Advances in Neural Information Processing Systems 35: Annual Conference on Neural Information Processing Systems (NeurIPS)*. 2022. (*Indicates equal contribution.*)

Nikhil Nigam, Seyedmohammad Mohseni, **Jonathan Valverde**, Sergey Voronin, Jayant Mukhopadhaya, Juan J Alonso. A Toolset for Creation of Multi-Fidelity Probabilistic Aerodynamic Databases. In *AIAA Scitech 2021 Forum.* 2021.

Jonathan Valverde, Nikhil Nigam, Ankit Tyagi, Junghsen Lieh, Matthew Nicholson, and Alireza Behbahani. Integrated Intelligent Control of Hybrid-Electric Unmanned Air Vehicles. In *AIAA Propulsion and Energy 2019 Forum*, Indianapolis, 2019. AIAA-2019-4349 (Restricted access).

HONORS

GEM Fellowship, with sponsorship from Amazon and UMD	2020
• Stipend, full tuition, and fees provided for four semesters of MS program.	
• One of two students selected by Amazon in 2020 for GEM sponsorship.	
Magna cum laude (Princeton University)	2016
Induction into Sigma Xi: The Scientific Research Society (Princeton University)	2016
Sigma Xi Book Award for Outstanding Research (Awarded for Senior Thesis)	2016
Honorable Mention at the International Mathematical Olympiad (IMO)	2010

OTHER PROFESSIONAL EXPERIENCE

Princeton Department of Computer Science, Princeton, NJ **Introduction to Programming Systems Grader**	2015-2016
The McGraw Center for Teaching and Learning, Princeton U., Princeton, NJ **Individual Tutor (Calculus and Linear Algebra)**	2014-2015
Princeton Department of Mechanical and Aerospace Engineering, Princeton, NJ **Summer Research Intern**	2014