Gal Katzhendler

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http://github.com/galkatzh

EDUCATION

Hebrew University, Jerusalem, Israel
PhD., Machine Learning, Feb. 2022 - Present   GPA: *N/A*
MSc., Machine Learning, Oct. 2018 - Dec 2021   GPA: *96.3*
BSc., Mathematics and Computer Science, Oct. 2015 - Aug. 2018   GPA: 94.8

EXPERIENCE

Engineering Final Projects Mentor   Hebrew University, Faculty of Engineering
and Computer Science
Oct. 2020 - Present
Tutored, guided, and evaluated numerous projects of final year engineering students.
The projects involved subjects including but not limited to: Object Detection, Music Information Retrieval, Computational Creativity, Verification of Neural Networks, Generative Models, and Brain-Computer Interface.

Teaching Assistant (Intro to AI)   Hebrew University, Faculty of Medicine
Oct. 2020 - Mar. 2021
Taught an introductory AI course for medicine students. Mainly about deep learning and applications to medicine.

Research Intern, AIPG   Intel Corporation
Aug. 2019 - Nov. 2019   Haifa, Israel
Conducted empirical research in the area of Adversarial Defenses for Deep Learning Models as part of Intel's AIPG department.

Teaching Assistant (Data Structures) Hebrew University, Faculty of Engineering
and Computer Science
Mar. 2019 - Aug. 2019
Taught the department's Data Structures course to first-year students.

Research Assistant   Prof. Noam Nisan
Aug. 2017 - Oct. 2018   Hebrew University of Jerusalem
Redesigned the software suite for the Nand to Tetris course (Java). Guided by Prof. Noam Nisan and Prof. Shimon Shocken.

Research Assistant   Hyadata Lab
Aug. 2016 - Mar. 2017   Hebrew University of Jerusalem
Crawled and scraped the web for data used in the lab's research projects.

E-learning Researcher   IDF
Nov. 2011 - Nov. 2013   IDF Medical School
Researched, prototyped, and developed various E-learning projects for different medical disciplines at the R&D department.

PROJECTS

Thesis: Approximate Description Length vs. Classic Notions of Learnability: Following a paper proposing a new complexity measure for classes of functions, which showed tight and realistic bound for the sample complexity of some neural networks, we showed its relation to classical notions of complexity including VC-dimension and Covering Numbers, solving multiple open questions around the subject.

A pre-print is available on arxiv

Curriculum Learning and Human Vision: Following a paper (link) which claims some evidence that humans and neural networks that are initially exposed to low resolution images recognize human faces better, we set out to investigate the the effect.

We re-implemented the article's original experiment, suggested multiple different metrics to measure the amount of spatial information a network has gained, and offered some new experiments shedding light on the phenomena, concluding it is nonexistent in neural networks.

A pre-print is available on arxiv. A short version of the paper was published as a letter to the editor on PNAS

COMMUNITY

Kolmogorov Complexity Reading Group Organization (2022-2023): I founded, and currently organize and lead an interdisciplinary reading group about Kolmogorov Complexity, Algorithmic Probability, and other adjacent subjects.

HONORS AND AWARDS

Dean's list
- On years 2016, 2017.

Rector's Prize
- On year 2020.

Scholarships
- Computer Science excellence Master's scholarship(2019 - 2021).
- Computer Science Honor's program scholarship (2016-2018).

SKILLS

Spoken Languages: Hebrew (native), English (fluent), Spanish (some).
Programming Languages: Python, C++, Java, Bash, LaTeX.

INTERESTS

Cellular Automata, Fundamentals of Deep Learning, Neural Architecture Search, Artificial Music Generation, Music Information Retrieval, Topological Data Analysis, Machine Learning, Algorithms.