

Teddy Koker

CONTACT

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<https://teddykoker.com>
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EDUCATION

Worcester Polytechnic Institute, Worcester, MA

B.S., Computer Science

Sep 2016 – Dec 2019

3.69/4.0 GPA. Senior thesis focused on applications of machine learning to social network graphs to predict future connections. Completed coursework in statistics, probability theory, machine learning, and computer architecture.

PROFESSIONAL EXPERIENCE

Grid AI, New York City, NY

AI Research Engineer

Aug 2020 –

Led project on model interpretability, introducing a new way of generating pixel level saliency maps. Created a package of metrics capable of efficient computation across multiple GPUs and server compute nodes. Continuing research within self-supervised learning of image representations.

Harvard Medical School, Boston, MA

Machine Learning Research Associate

Dec 2019 – Aug 2020

Conducted research within the Image and Data Analysis Core. Created deep learning model to detect manipulation of microscopy images. Proposed a novel approach to biomedical image retrieval.

Analog Devices Incorporated, Boston, MA

Research Engineering Intern

May 2019 – Aug 2019

Researched and implemented a state-of-the-art inertial navigation system for use in autonomous transportation. Assisted in other projects within the Autonomous Transportation group involving radar and lidar algorithms.

Part-Time Software Engineering Intern

Sep 2017 – Apr 2018

Created software to analyze products' data sheets and highlight potential security risks. Results were then presented at an internal conference.

Software Engineering Intern

Jun 2017 – Aug 2017

Built an efficient data communication protocol and software for internet-connected agricultural sensors that is currently deployed in farms across the world.

PUBLICATIONS

T.E. Koker, F. Mireshghallah, T. Titcombe, and G. Kaissis. 2021. U-Noise: Learnable Noise Masks for Interpretable Image Segmentation. *Under Review*.

T.E. Koker*, S.S. Chintapalli*, S. Wang, B.A. Talbot, D. Wainstock, M. Cicconet, M.C. Walsh. 2020. On Identification and Retrieval of Near-Duplicate Biological Images: a New Dataset and Protocol. *International Conference on Pattern Recognition*.

T.E. Koker and D. Koutmos. 2020. Cryptocurrency Trading Using Machine Learning. *Journal of Risk and Financial Management*. doi:10.3390/jrfm13080178.

PROJECTS

Personal Writing, <https://teddykoker.com>

Performers: The Kernel Trick, Fourier Features, and Attention, 5,000+ page views

Dec 2020

Deep Learning for Guitar Effect Emulation, 15,000+ page views

May 2020

NLP from Scratch: Annotated Attention, 1,000+ page views

Feb 2020

Beating the Odds: Machine Learning for Horse Racing, 13,000+ page views

Dec 2019

Trading with Reinforcement Learning, 6,000+ page views

Jun 2019

PROGRAMMING EXPERIENCE

Languages: Python, C, C++, Rust, HTML, CSS, Javascript, Java, \LaTeX

Server Technology: Distributed Compute, Docker, PostgreSQL, AWS, Jupyter Notebook, ROS

Libraries: PyTorch, Tensorflow, Scikit-learn, Flask, D3