

Vasiliki Tassopoulou

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RESEARCH INTERESTS



Probabilistic and Generative Modeling for Longitudinal Data, Uncertainty Quantification, Conformal Prediction

EDUCATION

School of Engineering and Applied Science, University of Pennsylvania

Sep 2020 – Present

PhD Candidate in Bioengineering, AI2D: Center for AI and Data Science for Integrated Diagnostics 

- Advisor: Prof. Christos Davatzikos 
- Co-Advisor: Prof. Haochang Shou 

Wharton School, University of Pennsylvania

Jan 2023 – March 2025




MSc Statistics and Data Science

- Advisor: Prof. Edgar Dobriban 
- Courses: Bayesian Modeling, Modern Data Mining, Advanced Statistical Inference

National Technical University of Athens

Nov 2013 – Nov 2019



Diploma in Electrical and Computer Engineering (5 year degree; 300 ECTS; joint BSc & MEng)

- Major: Computer Software, Signals, Control and Robotics
Minor: Computer Systems, Bioengineering
- Advisor: Prof. Petros Maragos 
- Thesis: An Exploration of Deep Learning Architectures for Handwritten Text Recognition  
- GPA: 8.56/10

RESEARCH EXPERIENCE

Research Assistant, Artificial Intelligence in Biomedical Imaging Lab


Aug 2020 – Present

Supervisor : Dr. Christos Davatzikos , *Dr. Haochang Schou* 

- Affiliations: AI2D Center for AI/Data Science for Integrated Diagnostics, Penn Statistics in Imaging and Visualization Endeavor (PennSIVE)
- Conduct my PhD Research on Probabilistic and Generative Modeling for Longitudinal Biomarkers

Undergraduate Research Assistant, Computer Vision and Speech Communication Lab

Mar 2018 – Nov 2019

Supervisor : Dr. Petros Maragos 

- Conducted my Master Thesis "An Exploration of Deep Learning Architectures on Handwritten Text Recognition"
- Published on ICPR 2020 : Enhancing Handwritten Text Recognition with N-Gram Sequence Decomposition and Multitask Learning
- Full Convolutional Model for HTR, Text Denoising for HTR error correction
- Tools : Pytorch, Python

INDUSTRY EXPERIENCE

Machine Learning Researcher, NASA Frontier Development Lab


June 2021 – Aug 2021

Supervised by Dr. Piotr Bilinski  and *Dr. Frank Soboczinski* 

- Developed automated systems for reporting natural events using metadata.
- Tools: Pytorch, Pytorch Lightning, Hugging Face, GCP, and Weights&Biases for model development and deployment.

Machine Learning Research Intern, RetinAI Medical AG

Dec 2019 – Aug 2020

Supervised by Dr. Sandro De Zanet 

- Worked on automatic image data validation and out-of-distribution detection for OCT images using Kernel Density Estimation.
- Modeled the progression of Geographic Atrophy using deep learning techniques.
- Employed Pytorch and Python for all developments.

Machine Learning Intern, DeepSea Technologies

Sep 2018 – Feb 2019

Research and Development Department

- Maintained and enhanced machine learning frameworks using TensorFlow, Python, and Python Flask.

- Conducted exploratory data analysis and implemented regression models for power-velocity curves of various vessels.






Software Engineering Intern, Nokia TC Athens

Sep 2017 – Mar 2018

Research and Development Department

- Participated in unit testing and managed JIRA for project tracking and management.
- Responsible for automating testing processes, significantly improving testing efficiency.

PUBLICATIONS

- **V. Tassopoulou** et al., "Personalized Prediction of Brain Trajectories in Aging and Neurodegeneration: Evidence from a Large Multi-Cohort Longitudinal Study" - Manuscript In Preparation
- **V. Tassopoulou** et al., "Uncertainty-Calibrated Prediction of Randomly-Timed Biomarker Trajectories with Conformal Bands" - **NeurIPS 2025**
- **V. Tassopoulou** et al., "Adaptive Shrinkage Estimation for Personalized Deep Kernel Regression in Modeling Brain Trajectories" - **ICLR 2025** 
- **SS Chintapalli** et al., "Generative models of MRI-derived neuroimaging features and associated dataset of 18,000 samples", **Nature Scientific Data 2024** 
- **V. Tassopoulou** et al., "Probabilistic Staging in Alzheimer's Disease with Deep Kernel Learning", **OHBM 2024**
- **R. Wang** et al., "Applications of Generative Adversarial Networks in Neuroimaging and Clinical Neuroscience", **Neuroimage 2023** 
- **V. Tassopoulou** et al., "Deep Kernel Learning with Temporal Gaussian Processes for Clinical Variable Prediction in Alzheimer's Disease", **ML4H 2022** 
- **V. Tassopoulou** et al., "Generating informative and accurate descriptions of natural hazards and phenomena using large transformer-based models", **AGU Fall Meeting 2021**
- **V. Tassopoulou** et al., "Automatic Narrative Generation with Earth Science TTransformer", **NVIDIA GTC 2022**
- **V. Tassopoulou**, **G. Retsinas** and **P. Maragos**, "Enhancing Handwritten Text Recognition with N-gram sequence decomposition and multitask learning", **ICPR 2020** 

TECHNICAL SKILLS, FRAMEWORKS

Languages: Python, R, C, Matlab, ML NJ, Prolog

Machine Learning/Deep Learning Frameworks: Pytorch, Pytorch Lightning, Pyro, GPytorch

General: Unix based OS, MS OS, LaTeX, Version Control (Git)

LANGUAGES

English (Proficient-C2), German (Intermediate-B1), Greek (Native)

HONORS-AWARDS

Leventis Foundation Scholarship of Academic Excellence Awarded 6000 USD for my PhD studies	<i>July 2024</i>
Leventis Foundation Scholarship of Academic Excellence Awarded 6000 USD for my PhD studies	<i>July 2023</i>
Gerondelis Foundation Scholarship of Academic Excellence Awarded 5000 USD for my PhD studies	<i>Nov 2021</i>
1st Year PhD Fellowship - University of Pennsylvania Awarded full scholarship of 80000 USD for the first year of my PhD Studies	<i>Aug 2020</i>
The Great Moment of Education Scholarship Awarded 1000 EU because I achieved the highest score in National University Entrance Exams in my school.	<i>Oct 2013</i>

SOCIETIES, AFFILIATIONS AND SERVICE

Co-organizer of **WiML Social @ ICLR 2025**

Reviewer at **ICLR 2026**, **NeurIPS 2025**, **Nature Aging**, **ICLR 2025**, **ISBI 2024**, **MLCN 2024**, **WiML Workshop @ NeurIPS 2024**