ANTHONY B. SICILIA

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EDUCATION

University of Pittsburgh **Pittsburgh, PA**
Ph.D Student in Intelligent Systems — School of Computing and Information

University of Pittsburgh
Bachelor of Science in Mathematics — Dietrich College of Arts and Sciences **April 2019**
Minor in Computer Science — School of Computing and Information **GPA: 3.89/4.00**
University of Miami: 14 Credits — College of Engineering **GPA: 4.00/4.00**
Relevant Coursework: Machine Learning, Natural Language Processing, Computer Vision, Sports Data Science, Algorithm Design, Data Structures, Graph Theory, Probability/Statistics, Real Analysis, Linear/Abstract Algebra.

RESEARCH

· **A. Sicilia**, X. Zhao, S.J. Hwang, "Domain Adversarial Neural Networks for Domain Generalization: When It Works and How to Improve", *arXiv preprint 2102.03924, 2021.*

· **A. Sicilia**, X. Zhao, A. Sosnovskikh, S.J. Hwang, "PAC Bayesian Performance Guarantees for (Stochastic) Deep Networks in Medical Imaging", in *Medical Image Computing and Computer Assisted Intervention (MICCAI), Strasbourg, FR, October, 2021*

· **A. Sicilia**, X. Zhao, D. Minhas, E. O'Connor, H. Aizenstein, W. Klunk, D. Tudorascu, S.J. Hwang, "Multi-Domain Learning by Meta-Learning: Taking Optimal Steps in Multi-Domain Loss Landscapes by Inner-Loop Learning", in *IEEE International Symposium on Biomedical Imaging (ISBI), April, 2021*

· X. Zhao, **A. Sicilia**, D. Minhas, E. O'Connor, H. Aizenstein, W. Klunk, D. Tudorascu, S.J. Hwang, "Robust White Matter Hyperintensity Segmentation on Unseen Domain", in *IEEE International Symposium on Biomedical Imaging (ISBI), April, 2021*

· T. Maidment, **A. Sicilia**, P. Healy, M. Alikhani, "Deception Detection in a Human-Machine Visual Dialogue Task", abstract (STAR Talk) at *NYAS Natural Language, Dialog and Speech Symposium (NDS), November, 2020*

· **A. Sicilia**, K. Pelechrinis, and K.Goldsberry, "DeepHoops: Evaluating Micro-Actions in Basketball Using Deep Feature Representations of Spatio-Temporal Data", in *ACM SIGKDD '19, Anchorage, AK, USA, August, 2019.*

· M. Silvis, **A. Sicilia**, and A. Labrinidis, "PittGrub: A Frustration-Free System to Reduce Food Waste by Notifying Hungry College Students", in *ACM SIGKDD '18, London, UK, August, 2018*

· **A. Sicilia**, A. Labrinidis, and K. Pelechrinis, "A Holistic Evaluation of Transit Supply and Demand using Network Analysis: The TDI Framework", oral presentation at *MUD3, ACM SIGKDD '18, London, UK, August, 2018*

· **A. Sicilia**, "On the Applications of Convex-hull Based Spatial Metrics in the NBA", poster presentation at *Cascadia Symposium on Statistics in Sports, Vancouver, BC, Canada, August, 2018*

RECENT WORK EXPERIENCE

University of Pittsburgh August 2019 - May 2020. August 2020-Present
Graduate Student Researcher | School of Computing and Information

· Conducted research on practical application of machine learning theory to deep neural networks. Focuses include multiple domain problems, computable guarantees on network performance, and medical imagining applications.

Amazon May 2020 - Aug 2020
Intern | Last Mile Machine Learning Science

· Designed/developed a machine learning pipeline to normalize a noisy data signal. Solution had lower error than rule-based competitors and limited data requirements for training and inference to maximize model coverage.
· Investigated model performance on out-of-distribution samples, designing solutions and fail-safes for problem cases.
· Delivered a production-level code package with all model components for easy re-use.

Toronto Blue Jays Baseball Research May 2019 - August 2019
Intern | High Performance Department

· Applied machine learning to answer interdisciplinary research questions for a state-of-the-art sports science team.
· Designed and developed predictive models integrated into automated systems to inform player development plans.
· Conducted exploratory analysis of datasets and hypothesis testing to help inform decision making.

STARTUPS

Komodo Feburary 2020 - May 2020
Team Member

· Designed/implemented early stage prototypes for automated financial document parsing through computer vision.
· Fund-raised in multiple start-up competitions, taking 3rd place in Princeton's Tiger Launch, 2020.

PittGrub December 2017 - May 2019
Co-founder | ADMT Labs

· Designed notification system for PittGrub (food-waste prevention start-up). Employed reinforcement learning and a valuation model to manage user prioritization under constraint by framing notification as a Knapsack Problem.
· Collaborated in development of system prototype and a comprehensive simulation environment for experimentation.
· Fund-raised in start-up competition, winning 3rd place in U. Pittsburgh's Kuzneski Innovation Cup, 2018.

ADDITIONAL WORK EXPERIENCE

Pitt Smart Living Project May 2018 - April 2019
Undergraduate Researcher | Data/Systems Team

· Modeled transit systems in 50 U.S. cities as spatially embedded, multi-layer networks using GTFS and GIS data.
· Developed general infrastructure to build model components including a partition of an areal bounding box, multiple transit network models from GTFS data, a spatial network embedding, and multiple types of Graph Laplacian.
· Designed multi-modal transit model to enumerate transportation routes under constraint using bidirectional BFS.

Recitation Instruction (Data Structures & Intro. Python) August 2017 - April 2019
Undergraduate Teaching Assistant | SCI, University of Pittsburgh

· Communicated course topics through weekly recitation lecture, supervised lab assignments, and office hours.

TECHNICAL PROFICIENCY

Frequent: Python — PyTorch, NumPy, Pandas, SciPy, Scikit-Learn, Matplotlib; SQL, TEX, Git.
Recent: Experience in Keras, MATLAB, Swift/Xcode, Java; Exposure to Bootstrap, SQL Alchemy, Flask.