HASSAN HAMAD

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PROFILE

AI researcher with a passion for developing intelligent systems and understanding the fundamentals that drive them. I'm currently working on AI agents that power next-generation solutions and products. In my free time, I enjoy following the latest research literature and reproducing new results from papers I find interesting.

EDUCATION

2019/08–2024/12   PhD in Electrical and Computer Engineering
University of Southern California (USC)   📍 Los Angeles, CA
» Focus on Efficient Training of Deep Learning Models from Compute and Data Side.
» Cumulative GPA: 4.0/4.0

2016/09–2019/05   M.S. in Communications Engineering
Technical University of Munich (TUM)   📍 Munich, Germany
» Focus on Information Theory and Wireless Communications
» Cumulative GPA: 3.9/4.0

2012/09–2016/06   B.E. in Computer and Communications Engineering
Notre Dame University - Louaize   📍 Zouk Mosbeh, Lebanon
» Focus on Algorithms, Digital Coding and Wireless Communications
» Cumulative GPA: 3.9/4.0

WORK EXPERIENCE

2025/01–Present   Applied Scientist
Amazon, AWS AI Fundamentals   📍 Santa Clara, CA
» Developing domain-specialized AI agents to automate and optimize complex workflows.

2024/05–2024/08   Applied Scientist Intern
Amazon, Alexa Shopping   📍 Seattle, WA
» Utilized synthetic data to improve LLM function-calling in dialogue systems.

2023/05–2023/08   Quantitative Machine Learning Intern
Bloomberg   📍 New York, NY
» Enhanced information extraction capabilities through LLMs in financial data.

2019/02–2019/06   Working Student - Machine Learning
Fraunhofer   📍 Munich, Germany
» Explored the use of RNNs for predicting latency of a V2V communication link.

2017/05–2018/05   Working Student - LTE physical layer system engineer
Intel   📍 Munich, Germany
» Worked on a physical layer concept to implement the V2X feature from 3GPP.

TEACHING EXPERIENCE

2018/10–2019/02   Lab Assistant for Communications Lab
Technical University of Munich (TUM)   📍 Munich, Germany
» Introduction to communication systems based on experiments and computer simulations.

Software Skills

Python	●●●●●●●●●●●○
PyTorch	●●●●●●●●●○○
C++	●●●●●●●●○○○
CUDA	●●●●●●●○○○
Tensorflow	●●●●●○○○○○
Linux	●●●●●●●○○○
AWS	●●●●●●○○○○
Docker	●●●●●●○○○○

Selected Publications

» ToolCritic: Detecting and Correcting Tool-Use Errors in Dialogue Systems
  - 👤 **H. Hamad**, Y. Xu, L. Zhao, W. Yan, N. Gyanchandani
  - 🏛 *arXiv e-prints, arXiv: 2510.17052*

» Bitwidth-Specific Logarithmic Arithmetic for Future Hardware-Accelerated Training
  - 👤 **H. Hamad**, Y. Qiu, P.A. Beerel, K.M. Chugg
  - 🏛 *arXiv preprint arXiv:2510.17058*

» FIRE: A Dataset for FInancial Relation Extraction
  - 👤 **H. Hamad**, A. Thakur, S. Pulikodan, N. Kolleri and K.M. Chugg.
  - 🏛 *Findings of the 2024 Annual Conference of the North American Chapter of the ACL **(NAACL)**.*

» Approximation Capabilities of Neural Networks using Morphological Perceptrons and Generalizations
  - 👤 W. Chang, **H. Hamad** and K.M. Chugg.
  - 🏛 *In 2022 Asilomar Conference on Signals, Systems, and Computers.*

» Joint State Sensing and Communication over Memoryless Multiple Access Channels
  - 👤 M. Kobayashi, **H. Hamad**, G. Kramer and G. Caire.
  - 🏛 *In 2019 IEEE International Symposium on Information Theory (ISIT).*

» Performance Analysis of Convolutional Codes over the Bernoulli-Gaussian Impulsive Noise Channel
  - 👤 **H. Hamad** and G. M. Kraidy.
  - 🏛 *In 2017 15th Canadian Workshop on Information Theory (CWIT).*

Academic Achievements

📅 2019/08–2020/08	Annenberg Fellowship recipient **University of Southern California (USC)**	📍 Los Angeles, CA
📅 2020/08–present	SLK America Fellowship recipient **V-Labs (in partnership with SLK Software)**	📍 Los Angeles, CA

Languages

Arabic (native)	English (fluent)	German (basic)