

HASSAN HAMAD

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PROFILE

- » PhD candidate at USC with focus on deep learning, NLP and LLMs (anticipated graduation in December 2024)
- » Expertise in developing large language models (LLMs) for information extraction and conversational AI.
- » Experienced in applying advanced AI techniques to real-world industry applications.

EDUCATION

- 📅 2019/08–present PhD in Electrical and Computer Engineering
University of Southern California (USC) 📍 Los Angeles, CA
» Focus on efficient training of deep learning models, especially on NLP tasks
» 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

- 📅 2024/05–2024/08 Applied Scientist Intern
Amazon 📍 Seattle, WA
» Developed LLM-based solutions to improve task-oriented 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	●●●●●●●●●●●●●●●●●●

PENDING PUBLICATIONS

- » **Towards a Self-Healing Mechanism for Large Language Models in Task-Oriented Dialogues.**
👤 **H. Hamad**, Y. Xu, and L. Zhao.
🏢 Under review at the *ACL Rolling Review (ARR)*.
- » **Bitwidth-Specific Logarithmic Arithmetic Towards Future Hardware Accelerated Training**
👤 **H. Hamad** and K.M. Chugg.
🏢 Under review at the *2024 Conference on Neural Information Processing Systems (NeurIPS)*.
- » **A Simple Approach to Leverage Synthetic Data for Named Entity Recognition in the Low-Data Regime**
👤 **H. Hamad**, S. Pulikodan, and K.M. Chugg.
🏢 Under review at the *Transactions of the Association for Computational Linguistics (TACL)*.

PAST PUBLICATIONS

- » **FIRE: A Dataset for Financial Relation Extraction**
👤 **H. Hamad**, A. Thakur, S. Pulikodan, N. Kollari 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)*.
- » **Small-signal analysis of ultra-high-speed 30 GHz VCSELs using an advanced multi-mode approach**
👤 W. Hamad, M. Bou Sanayeh, **H. Hamad**, M. Hamad, S. Georges, and W. Hofmann.
🏢 In *2017 Proceedings of the Integrated Optics: Physics and Simulations III conference*.

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)
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