

# HASAN ABED AL KADER HAMMOUD

Thuwal, Saudi Arabia

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## EDUCATION

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- PhD in Electrical and Computer Engineering** April 2022 -  
King Abdullah University of Science and Technology (KAUST)
- MS in Electrical and Computer Engineering** August 2020 - April 2022  
King Abdullah University of Science and Technology (KAUST)  
GPA: 4.0/4.0
- Bachelors in Electrical and Computer Engineering** August 2016 - May 2020  
American University of Beirut  
GPA : 4.0/4.0  
Average over 100: 95.61/100  
# of Honors: 8 (All Semesters)
- Rawdah High School** September 2001 - June 2016  
Lebanese Baccalaureate Official Exams (2015 - 2016)  
Mention: Excellent  
Ranked 10<sup>th</sup> in Lebanon | 7<sup>th</sup> in Mount Lebanon

## EXPERIENCE

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- Academic Research Intern at the University of Oxford** July 2023 -  
*Oxford, United Kingdom*
- Currently, I am doing a research internship at the University of Oxford, working under the guidance of Prof. Philip Torr and Dr. Adel Bibi. My focus lies in the realm of continual learning for vision related tasks.
- International Computer Vision Summer School 2023** July 2023  
*Sicily, Italy*
- I got selected to be part of ICVSS, the most prestigious Computer Vision summer school (acceptance rate 27% in 2023).
- Teaching Assistant – Deep Learning for Computer Vision with Prof. Bernard Ghanem** January 2023 - May 2023  
*Thuwal, Saudi Arabia*
- I was the lead TA for the course where I prepared and corrected student assignments. Additionally, I hosted Q&A sessions and gave some lectures on behalf of Prof. Bernard Ghanem.
- Teaching Assistant – SDAIA-KAUST Introduction to AI Summer Camp** August 2022  
*Thuwal, Saudi Arabia*
- I was the lead TA where my duties involved preparing teaching materials and guiding both students and other TAs during the course.
- Instructor at the Gulf Camp for Artificial Intelligence in Public Education** July 2022  
*Thuwal, Saudi Arabia*
- I was the instructor for a Deep Learning course delivered in Arabic, catering to 42 high school students who were carefully chosen as top talents from various countries in the Gulf region.
- Teaching Assistant – SDAIA-KAUST Introduction to AI Summer Camp** June 2022  
*Thuwal, Saudi Arabia*

- I was the lead TA where my duties involved preparing teaching materials and guiding both students and other TAs during the course.

**Teaching Assistant – SDAIA-KAUST Introduction to Machine Learning Summer Camp** May 2022  
*Thuwal, Saudi Arabia*

- I was the lead TA where my duties involved preparing teaching materials and guiding both students and other TAs during the course.

**Teaching Assistant – Deep Learning for Computer Vision with Prof. Bernard Ghanem** January 2022 - May 2022  
*Thuwal, Saudi Arabia*

- Worked on preparing and correcting student assignments. Additionally, I hosted Q&A sessions and gave some lectures on behalf of Prof. Bernard Ghanem.

**Teaching Assistant – Numerical Linear Algebra with Prof. Matteo Parsani** January 2021 - May 2021  
*Thuwal, Saudi Arabia*

- Worked on preparing and correcting student assignments. Additionally, I hosted Q&A sessions.

**Research Assistant at AUB – Designing Visio Stencil with Dr. Sami Karaki** January 2020 - May 2020  
*Beirut, Lebanon*

- Worked on designing a comprehensive MS Visio electric component stencil for efficient and standardized drawing of electric circuit schematics. The stencil is currently being used to draw the circuits presented in course material and exams.

**Research Assistant at AUB – Masri Institute Project with Dr. Ali Bazzi** February 2020 - April 2020  
*Beirut, Lebanon*

- The project is titled “Revolutionizing the Electrical Energy Sector in Lebanon From Private Microgrids to a Dynamic Clean - Energy Market: Lebanese Grid 3.0”.
- I worked on studying the optimal way for simulating the Lebanese electric power grid using PowerWorld Simulator.

**Research Assistant at AUB with Dr. Ali Bazzi** August 2019 - February 2020  
*Beirut, Lebanon*

- Worked on developing two ways for Maximum Power Point Tracking of Solar Panels.
- Published and presented two papers in PECT 2020 titled: “Adaptive Ripple Correlation Control (ARCC) for Solar Maximum Power Point Tracking” and “Model-based MPPT with Corrective Ripple Correlation Control”

**Mentoring 1<sup>st</sup> Prize Winning Team at Mobarat Al Oulum Science Fair 2019** June 2019 - August 2019  
*Beirut, Lebanon*

- Mentored students on how to integrate power electronics (buck converters, relays, MOSFETs, ...) with micro-controller (Arduino). The mentoring included hardware and software design. The group mentored won the first prize (gold medal) in the environmental project’s category.

**Internship at King Abdullah University of Science and Technology** June 2019 - September 2019  
*Thuwal, Saudi Arabia*

- Worked on a project that aims at understanding the decision boundaries of deep neural networks through a tropical geometric approach.
- Submitted a paper with the group titled “On the Decision Boundaries of Deep Neural Networks: A Tropical Geometry Perspective”.

**Teaching Assistant at AUB - Electronics (EECE 310)** September 2018 - December 2018  
*Beirut, Lebanon*

- Gave recitations (Problem Solving Sessions) for Electronics course.
- Students in my class were offered extra sheets, notes, and summaries that allowed them to achieve very high grades.

### Debbas Control Systems (Trainee)

December 2017 - January 2018

*Beirut, Lebanon*

- Designed the control system for fuel and water tanks alarm system at MEATC (Middle East Airlines Training Center)
- Entered data for the Johnson Controller pin associations for several projects.
- Made AutoCAD drawings for about 80 electrical boards in MEATC.
- Modified an existing riser of the project in MEATC.
- Created an engineering file for MEATC project.
- Participated in several projects including Rafik Hariri Airport Training Center and Residential Apartments in Downtown.

## PUBLICATIONS

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- Abdelwahid, S., Malik, M.R., **Al Kader Hammoud, H.A.**, Hernández-Pérez, F.E., Ghanem, B., & Im, H.G. (2023). Large eddy simulations of ammonia-hydrogen jet flames at elevated pressure using principal component analysis and deep neural networks. [**Combustion and Flame**].
- Zhuge, M., Liu, H., Faccio, F., Ashley, D. R., Csordás, R., Gopalakrishnan, A., ... **Hammoud, HAAK.**, ... Schmidhuber, J. (2023). Mindstorms in Natural Language-Based Societies of Mind. arXiv preprint arXiv:2305.17066.
- Li, G.\*, **Hammoud, H.A.\***, Itani, H.\*, Khizbullin, D., Ghanem, B. (2023). CAMEL: Communicative Agents for Mind Extraction from Large Scale Language Model Society. [**NeurIPS2023**].
- **Hammoud, H.A.\***, Prabhu, A.\*, Lim, S.N., Torr, P., Bibi, A., Ghanem, B. (2023). Towards a True Evaluation of Rapid Adaptation in Online Continual Learning [**ICCV2023**].
- **Hammoud, H.A.**, Bibi, A., Torr, P.H., & Ghanem, B. (2023). Don't FREAK Out: A Frequency-Inspired Approach to Detecting Backdoor Poisoned Samples in DNNs. [**CVPRW2023**]
- Prabhu, A.\*, **Hammoud, H.A.\***, Dokania, P., Torr, P., Lim, S.N., Ghanem, B., Bibi, A. (2023). Computationally Budgeted Continual Learning: What Does Matter? [**CVPR2023**].
- Ghunaim, Y., Bibi, A., Alhamoud, K., Alfarrar, M., **Hammoud, H.A.**, Prabhu, A., Torr, P.H., & Ghanem, B. (2023). Real-Time Evaluation in Online Continual Learning: A New Paradigm. [**CVPR2023**].
- Abdelwahid, S., Rafi Malik, M., **Abed Al Kader Hammoud, H.**, E. Hern'andez P'erez, F., Ghanem, B., & Im, H.G. (2023). Large eddy simulations of NH<sub>3</sub>-H<sub>2</sub> jet flame at elevated pressure using PCA with inclusion of NH<sub>3</sub>/H<sub>2</sub> ratio variation. [**AIAA SCITECH 2023 Forum**]
- **Hammoud, H.A.**, Liu, S., Alkhraishi, M., Albalawi, F., & Ghanem, B. (2023). Look, Listen, and Attack: Backdoor Attacks Against Video Action Recognition. ArXiv, abs/2301.00986.
- Alhamoud, K.\*, **Hammoud, H.\***, Alfarrar, M., & Ghanem, B. (2022). Generalizability of Adversarial Robustness Under Distribution Shifts. [ **Practical-DL Workshop at AAAI 2023 and TMLR Featured Certification**].
- **Hammoud, Hasan Abed Al Kader** and Bernard Ghanem. "Check Your Other Door! Establishing Backdoor Attacks in the Frequency Domain." [**BMVC2022**].
- Qian, G., Li, Y., Peng, H., Mai, J., **Hammoud, H.**, Elhoseiny, M., & Ghanem, B. (2022). PointNeXt: Revisiting PointNet++ with Improved Training and Scaling Strategies. [**NeurIPS2022**].
- Alfarrar, M., Bibi, A., **Hammoud, H.**, Gaafar, M., & Ghanem, B. (2022). On the Decision Boundaries of Deep Neural Networks: A Tropical Geometry Perspective. [**TPAMI2022**].
- Qian, G., **Hammoud, H.**, Li, G., Thabet, A.K., & Ghanem, B. (2021). ASSANet: An Anisotropic Separable Set Abstraction for Efficient Point Cloud Representation Learning. [**NeurIPS2021 Spotlight**].
- **H. A. Al Kader Hammoud** and A. M. Bazzi, "Model-based MPPT with Corrective Ripple Correlation Control," 2020 IEEE Power and Energy Conference at Illinois (PECI), Champaign, IL, USA, 2020, pp. 1-6, doi: 10.1109/PECI48348.2020.9064681. [**PECI2020**].

- **H. A. Al Kader Hammoud** and A. M. Bazzi, "Adaptive Ripple Correlation Control (ARCC) for Solar Maximum Power Point Tracking," 2020 IEEE Power and Energy Conference at Illinois (PECI), Champaign, IL, USA, 2020, pp. 1-7, doi: 10.1109/PECI48348.2020.9064630. [**PECI2020**].

## OPEN-SOURCE PROJECTS

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- **CAMEL**: Communicative Agents for "Mind" Exploration of Large Scale Language Model Society (2.9K Stars on GitHub).

## AWARDS & ACCOMPLISHMENTS

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- KAUST - CEMSE Dean's Research Excellence Award (2023)
- SDAIA Research Affiliate (2022-2023)
- Distinguished Graduate Award for Electrical and Computer Engineering (2020), American University of Beirut
- Mohamad Ali Safieddine Endowed Award for Academic Excellence (2020), American University of Beirut
- Dean's honor list award for four consecutive years (all semesters), American University of Beirut
- Ranked first on Electrical Engineering Department among the graduating class with a GPA of 4/4, American University of Beirut
- Blom Shabab Top Lebanese Students Scholarship (30,000\$ University Grant)
- Merit Scholarship (2014, 2015, and 2016 at Rawdah High School)

## PROFESSIONAL MEMBERSHIPS

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|----------------------------|-------------------------|
| · IEEE AUB Member          | August 2016 - May 2020  |
| · AUB Robotics Club Member | January 2019 - May 2020 |

## LANGUAGES

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- Fluent in English and Arabic
- Basic French

## INTERESTS & HOBBIES

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- Cycling
- Weightlifting
- Photography