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Kaleab A. Kinfu

Experience

09/2023 – **CIS Research Fellow**, *University of Pennsylvania*, Philadelphia, PA.
Advisor: Prof. René Vidal.

05/2023 – 08/2023 **PhD Resident in AI**, *Google X*, Mountain View, CA.
Team: Classified Projects.

05/2022 – 08/2022 **Research Intern**, *Microsoft Research*, Redmond, WA.
Project: 3D Telemedicine System. Advisor: Dr. Spencer Fowers

09/2020 – 05/2023 **Research Assistant**, *JHU Mathematical Institute for Data Science*, Baltimore, MD.
Advisors: Prof. René Vidal and Prof. Joshua T. Vogelstein

08/2020 – 12/2020 **Computer Vision Researcher**, *Excento*, Gdańsk, Poland.
Manager: Dr. Anna Jezierska.

02/2020 – 07/2020 **Research Associate**, *Institute of Computer Graphics and Vision, TU Graz*, Austria.
Advisor: Prof. Horst Bischof.

05/2019 – 08/2019 **Research Intern**, *UAM Video Processing and Understanding Lab*, Madrid, Spain.
Advisors: Prof. Pablo C. Lopez and Prof. Marcos E. Viñolo.

Education

2023 – **Ph.D. Candidate, Computer and Information Science**, *University of Pennsylvania*, Philadelphia, PA.
Advisor: Prof. René Vidal.

2021 – 2023 **Ph.D. Student, Computer Science**, *Johns Hopkins University*, Baltimore, MD.
Advisor: Prof. René Vidal.
Transferred to University of Pennsylvania with my advisor.

2020 – 2021 **M.S.E., Biomedical Engineering**, *Johns Hopkins University*, Baltimore, MD.
Advisor: Prof. Joshua T. Vogelstein.

2018 – 2020 **M.S., Informatique**, *Université de Bordeaux*, Bordeaux, France.
Advisors: Prof. Vincent Lepetit and Prof. Pascal Desbarats.
Part of an Erasmus Mundus Joint Masters Program in Image Processing and Computer Vision.

2018 – 2020 **M.S., Image Processing and Computer Vision**, *Universidad Autónoma de Madrid*, Madrid, Spain.
Advisor: Prof. Pablo Carballeira Lopez.
Part of an Erasmus Mundus Joint Masters Program in Image Processing and Computer Vision.

2018 – 2020 **M.S., Computer Science Engineering**, *Pázmány Péter Catholic University*, Budapest, Hungary.
Advisor: Prof. György Cserey.
Part of an Erasmus Mundus Joint Masters Program in Image Processing and Computer Vision.

2013 – 2017 **B.S., Computer Science**, *Addis Ababa University*, Addis Ababa, Ethiopia.

Research Interests

Computer Vision: Motion Analysis and Synthesis, Scene and Video Understanding.

Machine Learning: Lifelong Learning, Robustness, Generalization.

Publications & Preprints

Kinfu, Kaleab A. and René Vidal. Efficient Vision Transformer for Human Pose Estimation via Patch Selection. *British Machine Vision Conference (Oral)*, 2023.

Kinfu, Kaleab A. and René Vidal. Analysis and Extensions of Adversarial Training for Video Classification. *Computer Vision and Pattern Recognition Workshop*, 2022.

Vogelstein, Joshua T. et al. Prospective Learning: Back to the Future. *ArXiv, abs/2108.13637*, 2022.

Xu, Haoyin, **Kinfu, Kaleab A.** et al. When are Deep Networks really better than Decision Forests at small sample sizes, and how? ArXiv abs/2108.13637, 2021.

Kinfu, Kaleab A. Partition & Decode: an implicit internal representation framework. M.S.E. Thesis. Johns Hopkins University, 2021.

Kinfu, Kaleab A. Lifelong Learning for Autonomous Vehicles. M.S. Thesis. Technische Universität Graz, 2020.

Skills

Languages	Python, C/C++, Java, Matlab, C#, PHP
Libraries	PyTorch, TensorFlow, OpenCV, scikit-learn, SciPy, OpenGL, PCL

Selected Honors and Awards

2021	Google CS Research Mentorship Program Scholar.
2018	Erasmus+, Erasmus Mundus Joint Master Scholarship (EUR 49,000).
2017	Best Bachelor Thesis Award, Addis Ababa University.
2017	Very Great Distinction, Dux of College of Natural Sciences, Addis Ababa University.

Professional Activities

Advisor

Large Language Model Efficiency Challenge, NeurIPS 2023.

Program Committee

1st Workshop on Out-of-distribution Generalization and Adaptation in Natural and Artificial Intelligence, NeurIPS 2021.

External Reviewer

Research Development Fund, Xi'an Jiaotong-Liverpool University.

Invited Talks

Efficient Vision Transformers for Human Pose Estimation.

Nov 2023 Workshop on Computational Aspects of Deep Learning.

Robustness in Action Recognition Networks.

Sep 2022 Image Processing and Computer Vision Workshop.

Sep 2022 Guest Lecture, Xi'an Jiaotong-Liverpool University.
Real-time Depth Estimation on Embedded Systems.

Aug 2022 AI Power Talk, Microsoft Research.
Lifelong Learning for Autonomous Vehicles.

Mar 2022 GradCohort, Computing Research Association.

Sep 2020 Pázmány Péter Catholic University.
Lifelong Learning: Theory and Practice.

Sep 2021 THEORINET, Simons Foundation.
Introduction to Artificial Intelligence. [bootcamp]

Aug 2021 American Spaces - U.S. Embassy, Addis Ababa.

Mentorship

Mentor JHU Research Experience for Undergraduates.

Mentor Emerging African Scholars Mentorship Program.

Mentor Young African Explorers Programme.