

Ahmed Tawfik Aboukhadra

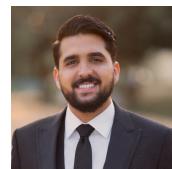
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[GitHub ATAboukhadra](https://github.com/ATABoukhadra)

[Website https://ataboukhadra.github.io/](https://ataboukhadra.github.io/)

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Experience

- 2021 – Present **Researcher**, DFKI — Augmented Vision, Kaiserslautern, Germany.
Designing fast and accurate models for hand-object 3D reconstruction using Deep Learning methods such as Transformers, Foundation Models, and Gaussian Splatting.
- 2021 **Research Intern**, CISPA Helmholtz Center, Saarbrücken, Germany.
Investigated robustness and adversarial defenses for deep neural networks.
- 2020 **Machine Learning Intern**, HackerOne, Groningen, Netherlands.
Improved duplicate vulnerability detection using BERT-based NLP systems.

Education

- 2021 – Present **Ph.D., Computer Science**, RPTU Kaiserslautern, Germany.
Research focus: Hand-Object 3D Reconstruction.
- 2019 – 2021 **M.Sc., Artificial Intelligence**, Maastricht University, Netherlands. GPA: 8.33/10.
Thesis: *Defenses Against Adversarial Attacks on Deep Convolutional Networks* (at CISPA).
- 2014 – 2019 **B.Sc., Computer Science & Engineering**, German University in Cairo (GUC), Egypt.
GPA: 1.06 (A).

Publications

- 1 A. T. Aboukhadra, M. Rogge, N. Robertini, *et al.*, “Ghost: Fast category-agnostic hand-object interaction reconstruction from rgb videos using gaussian splatting,” **Under review at CVPR 2026. 1st Place Solution — ARCTIC Challenge, 9th HANDS Workshop @ ICCV 2025.**
- 2 A. T. Aboukhadra, J. Malik, N. Robertini, A. Elhayek, and D. Stricker, “Shapegraformer: Graformer-based network for hand-object reconstruction from a single depth map,” *IEEE Access*, vol. 12, pp. 124 021–124 031, 2024.
- 3 A. T. Aboukhadra, N. Robertini, J. Malik, A. Elhayek, G. Reis, and D. Stricker, “Surgeonet: Realtime 3d pose estimation of articulated surgical instruments from stereo images using a synthetically-trained network,” in *DAGM German Conference on Pattern Recognition*, Springer, 2024, pp. 199–211.
- 4 A. T. Aboukhadra, J. Malik, A. Elhayek, N. Robertini, and D. Stricker, “Thor-net: End-to-end graformer-based realistic two hands and object reconstruction with self-supervision,” in *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, Jan. 2023, pp. 1001–1010.

Skills

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|---------------------------------|---|
| Programming | Python, PyTorch, Java, C/C++, Bash. |
| Deep Learning & Computer Vision | Foundational Models, Transformers, GCNs, Gaussian Splatting, 3D Reconstruction, Mesh Processing, Pose Estimation, Self-Supervised Learning. |
| Tools & Dev | Git, Linux, OpenCV, NumPy/Pandas, TensorBoard, HPC environments. |