

# ATHANASIOS CHARISOUDIS

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Rotkreuz, Switzerland

## EXPERIENCE

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- **Hochschule Luzern (HSLU)** Apr 2024 – Present  
*Research Engineer* Rotkreuz, Switzerland
  - Advisor: Prof. Aljosa Smolic (Projects: TRANSMIXR, FaVoRe, HEAT).
  - Working on volumetric 3D human representations; accelerating training and realistic deformations for Gaussian Splatting.
  - Designed and operated a multiview RGB-D capture pipeline, including hardware rig configuration (synchronization, calibration) and software stack for acquisition, processing, and live previews.
- **MLReproHub** Mar 2023 – Present  
*Researcher* Stockholm, Sweden
  - Reproducing state-of-the-art Machine Learning papers with two fellow scholars from the KTH MSc in Machine Learning program.
- **SCANIA Group** Jun 2022 – Sep 2022  
*Research Internship, Autonomous Systems R&D* Södertälje, Sweden
  - Worked on Data-Driven Scenario-Based Validation of autonomous driving software stacks – from 3D deep-learning perception to traffic scenario identification and edge case analysis.
- **Royal Institute of Technology (KTH)** Feb 2022 – Feb 2023  
*Research Engineer & Teaching Assistant* Stockholm, Sweden
  - Advisor: Prof. Hedvig Kjellström (HiSS Project). Human-interaction modeling with 3D computer vision; explored directions toward 3D human avatars.
  - Teaching Assistant: (DD2380) Artificial Intelligence; (DD2434) Advanced Machine Learning; (DD1420) Foundations of Machine Learning.
- **Eurotechnik Ltd** Mar 2015 – Nov 2020; Jul 2023 – Aug 2023  
*Full Stack Developer, IT* Thessaloniki, Greece
  - Built a production CRM + ERP web app ([eurotechnik.gr](http://eurotechnik.gr)) and custom CMS in Laravel (LAMP).
  - Initiated “Eurotechnik Web Services” department ([ews.eurotechnik.gr](http://ews.eurotechnik.gr)) hosting internal web apps, including CRM, ERP, and OMS.

## EDUCATION

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- **École Polytechnique Fédérale de Lausanne (EPFL)** Sep 2024 – Oct 2025  
*External Ph.D. Student, Signal Processing Laboratory 4 (LTS4)* Lausanne, Switzerland
  - Advisor: Prof. Pascal Frossard
- **Royal Institute of Technology (KTH)** 2021 – 2024  
*M.Sc. in Machine Learning* Stockholm, Sweden
  - Thesis: *Monocular Dynamic Motion Capture: A Regression-Optimization Hybrid Approach*
- **Aristotle University of Thessaloniki** 2015 – 2021  
*Diploma in Electrical and Computer Engineering* Thessaloniki, Greece
  - Diploma Thesis: *Generative Adversarial Networks for pose and style selection in fashion design applications*
  - Final (C)GPA: 8.88/10.00

## PUBLICATIONS

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- [C.1] Simone Croci, Athanasios Charisoudis, Kit Yung Lam, Aljosa Smolic (2026). **Evaluation of Dynamic Gaussian Splats versus Point Clouds for Sparse Captures**. Accepted at *34th European Signal Processing Conference (EUSIPCO)*.
- [C.2] Athanasios Charisoudis, Simone Croci, Kit Yung Lam, Aljosa Smolic (2026). **On-Location Volumetric Video Capture for Immersive Live Performances**. Submitted to *2026 IEEE Conference in Telepresence*.

- [C.3] Athanasios Charisoudis, Simone Croci, Lam Kit Yung, Pascal Frossard, Aljosa Smolic (2025). **A Fast Volumetric Capture and Reconstruction Pipeline for Dynamic Point Clouds and Gaussian Splats**. In *Proceedings of the ACM International Conference on Visual Media Production (CVMP '25)*, London, United Kingdom. ACM ISBN: 979-8-4007-2117-5/2025/12. DOI: 10.1145/3756863.3769713.
- [C.4] Athanasios Charisoudis, Simon Ekman von Huth, Emil Jansson (2022). **[Re] Masked Autoencoders Are Small Scale Vision Learners: A Reproduction Under Resource Constraints**. *ML Reproducibility Challenge 2022*, poster at NeurIPS 2023.

## NOTABLE PROJECTS

- **Master's Thesis: Monocular Dynamic Motion Capture** 2024  
*Tools: Python, PyTorch, 3D Vision* [\[Report\]](#)
  - **Royal Institute of Technology (KTH)** — Supervisor: Prof. Hedvig Kjellström.
  - Proposed a regression-optimization hybrid pipeline combining learned global motion regression with hand-crafted optimization for dynamic monocular setups; improved 3D motion recovery vs. baselines.
  - *Publication of the thesis findings is ongoing.*
- **GANs for Biological Image Synthesis** 2023  
*Tools: Python, PyTorch, Deep Learning (GANs)* [\[Report\]](#)
  - Reproduced and extended Osokin et al.'s results on recreating cellular evolution images under fluorescence microscopy.
- **Diploma Thesis: Generative Adversarial Networks for Pose and Style Selection in Fashion** 2019 – 2021  
*Tools: Python, PyTorch, GANs (pix2pix, CycleGAN, StyleGAN, MUNIT)* [\[Report in Greek\]](#)
  - **Aristotle University of Thessaloniki (AUTH)** — Supervisors: Prof. Pericles Mitkas, Dr. Antonios Chrysopoulos.
  - Developed GAN models for realistic clothing transformations; compared conditional and unpaired translation variants; conducted qualitative user study and ablations.
- **Full Stack Development (Eurotechnik Project)** 2015–2019, 2023  
*Tools: PHP (Laravel), MySQL, LAMP, Docker*
  - CRM + ERP platform deployed on dedicated on-premise infrastructure with custom CMS.
  - Added an Order Management System in 2023 using Operational Research methods (stock cutting, integer programming).
- **Ad-hoc P2P Network with Raspberry Pi's** 2019  
*Tools: C99, POSIX threads, client-server networking* [\[Link\]](#)
  - Semester project for “Embedded Systems”: threaded real-time client-server app to log and display events.

## SKILLS

- **Very Strong: Python** (PyTorch, TDD, servers setup & management, ROS, systems programming); **MATLAB** (DL Toolbox R2020, Robotics & Peter Corke Toolbox, Fuzzy Systems, Audio Coding, Adaptive Signal Processing, Control); **MySQL** (prod-grade schemas for eurotechnik.gr, intra.eurotechnik.gr, ECESCON 11, Labyrinth); **PHP** (Laravel on LAMP); **Git** (600+ contributions/year, last 4 years); **Docker** (containers & inter-networks for dev/deploy, 3+ yrs)
- **Strong: C** (Pthreads, OpenMP, MPI; UNIX systems programming); **Java** (UDP/TCP sockets, NIO; Algorithms & DS); **C++** (Parallel algorithms, OOP, numerical methods)
- **Medium: Assembly** (MIPS32, ATMEL AVR, ARMv6)

## CERTIFICATIONS

- **GANs Specialization (Coursera) – 3-course specialization** 2020
- **IELTS (University of Cambridge) – overall band 8.0/9.0** 2021
- **IEEE Xtreme 10.0 (IEEE) – Finished 429/2500** 2016
- **C2 Proficiency in English (University of Michigan) – grade B** 2009

## COURSES & MOOCs

- Machine Learning for Inverse Graphics (2023) – Prof. Vincent Sitzmann ([scenerepresentations.org](https://scenerepresentations.org))
- Deep Generative Models (2021) – Prof. Stefano Ermo ([bilibili.com](https://bilibili.com))
- GANs Specialization (2020) – Prof. Sharon Zhou ([coursera.org](https://coursera.org))
- CS231n: CNNs for Visual Recognition (2019) – Fei-Fei Li, Justin Johnson ([cs231n.stanford.edu](https://cs231n.stanford.edu))
- Non-Linear Systems (2018) – J. J. E. Slotine ([mit.edu/nsf](https://mit.edu/nsf))

## REFERENCES

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1. **Prof. Dr. Aljosa Smolic**  
Professor, Co-Head Immersive Realities Research Lab, Hochschule Luzern  
Email: aljosa.smolic@hslu.ch
2. **Prof. Erik Fransén**  
Professor, Division of Computational Science and Technology, KTH  
Email: erikf@kth.se
3. **Prof. Hedvig Kjellström**  
Professor, Division of Robotics, Perception and Learning, KTH (*Thesis Supervisor*)  
Email: hedvig@kth.se
4. **Prof. Pericles Mitkas**  
Professor, E.C.E. Dept., Aristotle University; ISSEL (*Thesis Supervisor*)  
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