Ioannis K Chatzis

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Personal Page • Github • LinkedIn • Google Scholar

Research Interests

Trustworthy Machine Learning; Generative Models and Diffusion Models; Interpretable Machine Learning and Explainable Artificial Intelligence; Algorithmic Recourse.

Education

University of Wisconsin–Madison
Ph.D. in Electrical and Computer Engineering *August 2026 – August 2031 (expected)*
Advisor: Prof. Grigorios Chrysos

National Technical University of Athens
Diploma (M.Eng.) in Electrical and Computer Engineering *October 2019 – November 2025*
GPA: 7.69/10 (Greek scale)
Diploma Thesis: **Actionable Recourse Summaries via Optimal Decision Trees**[pdf] — *Supervisors: Giorgos Stamou, Jason Liartis*

Publications

Under Review

1. **Optimal Recourse Summaries via Bi-Objective Decision Tree Learning**[pdf]
   Ioannis Chatzis, Jason Liartis, Athanasios Voulodimos, Giorgos Stamou
   arXiv preprint, 2026.

Talks/Presentations

1. **Optimal Recourse Summaries via Bi-Objective Decision Tree Learning** (Poster)
Greeks in AI 2026, Athens, Greece — July 2026

Research Experience

Artificial Intelligence and Learning Systems Laboratory (AILS), NTUA — Athens, Greece
Research Collaborator with Prof. Giorgos Stamou *September 2025 – August 2026*

- Developed SOGAR: formulated recourse summary learning as a novel bi-objective optimization task solved via optimal decision trees, computing the full Pareto front between recourse effectiveness and cost; paper under review.
- Extended STreeD's solver with multi-threaded CPU (TBB) and GPU (CUDA/Metal) acceleration for the leaf action-assignment step, eliminating solver time-outs and reducing runtime by over 23× on the German Credit dataset; explored action spaces, cost functions, and sparsity constraints to shape the framework.

Industry Experience

HYPERSYSTEMS S.A. — Athens, Greece
Software Engineering Intern – Part Time *June 2024 – September 2024*

- Built a secure, access-controlled RAG assistant with ACL-aware retrieval and document summarization; developed ML/NLP pipeline for document classification, sensitivity labeling, and rule-based routing.

Volunteering

UniAI Student Initiative — Athens, Greece
Education Associate *September 2024 – September 2025*

- Organized and delivered AI/ML educational seminars for university students; supported UniAI Makeathon 2025: planning, challenge design, logistics, and participant mentoring.

Greeks in AI 2026 — Athens, Greece
Student Volunteer *July 2026*

•Volunteered for the full 3-day conference (July 15–17), supporting on-site operations and logistics.

Projects

- **Computer Vision & Deep Learning**
  - **Image & Video Analysis**: Gaussian/Laplacian pyramids; LeNet/AlexNet/VGG on CIFAR-100; YOLOv3 detection + SORT tracking pipeline.
  - **Neural Networks & Deep Learning**: Wide ResNets with MixUp for CIFAR-10; fine-tuned Transformers for commonsense QA and semantic similarity.
- **Artificial Intelligence & Reasoning**
  - **Artificial Intelligence**: Adversarial maze solver (alpha–beta pruning); Prolog-based and tree/forest movie recommenders.
  - **Advanced Artificial Intelligence**: Research on counterfactual explanations via decision trees.

Awards

- **UniAI Makeathon 2024 – 1st Place**
  Built an app comparing design mockups to implementations via OCR, object detection, and image similarity; used AWS & GPT-based NLP to detect layout mismatches.

Technical Skills

Programming: Python, C/C++, Java
Frameworks: PyTorch, TensorFlow, CUDA, Git, Linux, LaTeX
Languages: Greek (native), English (fluent)