Mert Kilickaya

Senior Research Scientist / Applied ML Scientist

Amsterdam, Netherlands
kilickayamert@gmail.com — kilickayamert.com — Google Scholar

Summary

Senior Research Scientist with an end-to-end track record from foundational research to production-grade machine learning systems. Expertise in vision and foundation models, continual and self-supervised learning, and large-scale ML pipelines. Inventor on 4 US patents with deployed systems in highly regulated medical environments and resource-constrained mobile platforms.

Experience

Deep Learning Researcher   2023 – Present
Agendia, Netherlands

- Led the design and development of a deep-learning-based biomarker for breast cancer recurrence, owning model architecture, validation strategy, and regulatory-facing documentation.

- Drove technical decision-making under strict regulatory (IVDR) constraints, ensuring robustness, precision, and reproducibility of ML pipelines for clinical deployment.

- Built and deployed end-to-end multiple-instance learning pipelines over tens of thousands of whole-slide images, covering data curation, training, evaluation, and containerized inference.

- Owned the full ML lifecycle from problem formulation to Dockerized deployment using PyTorch, collaborating closely with clinicians and biologists to align model behavior with clinical objectives.

- Resulted in a filed patent and an ongoing IVDR submission.

Postdoctoral Researcher   2022 – 2023
TU Eindhoven, Netherlands

- Conducted research on continual pre-training of foundation models under distribution shift, focusing on mitigating catastrophic forgetting in long-running self-supervised training regimes.

- Defined research directions and acted as a de facto co-supervisor for 5+ PhD and MSc students, leading to publications at ECCV and BMVC.

- Designed experimental protocols and benchmarks for evaluating incremental and continual learning methods at scale.

Research Scientist Intern   2020 – 2021
Huawei, Finland

- Improved large-scale mobile visual search systems under strict latency and memory constraints for on-device and near-device deployment.

- Developed text-interactive visual search models optimized for efficiency, resulting in an approved US patent.

- Worked within production-oriented research teams bridging algorithm design and deployment considerations.

Graduate Research Assistant   2017 – 2022
Qualcomm QUVA Labs, Netherlands

- Developed deep vision models for visual search, detection, and recognition.

- Contributed to research that resulted in 4 granted US patents and multiple top-tier publications.

- Focused on scalable model design suitable for real-world deployment scenarios.

Education

PhD in Deep Learning 2017 – 2022
University of Amsterdam, Netherlands
Thesis: *Contextual Understanding of Visual Interactions*

MSc in Computer Vision 2013 – 2016
Hacettepe University, Turkey
Thesis: *Visual Importance with Applications to Vision and Language*

Selected Publications

(H-index: 6, Citations: 323+)
Top-tier venues including CVPR, ECCV, BMVC, WACV, and EACL

- HyTAS: A Transformer Architecture Search Benchmark (ECCV 2024)

- Locality-Aware ViTs for Hyperspectral Imaging (BMVC 2023)

- Are Labels Needed for Incremental Instance Learning? (CVPRW 2023, Oral)

- Structured Visual Search via Composition-Aware Learning (WACV 2021)

- HOI Detection via Weak Supervision (BMVC 2021)

- Re-evaluating Automatic Metrics for Image Captioning (EACL 2017, Oral)

Patents

- Visual Search via Conversational Interaction (Huawei, 2022)

- Network for Interacted Object Localization (Qualcomm, 2021)

- Context-driven Learning of Human-Object Interactions (Qualcomm, 2020)

- Subject-Object Interaction Recognition Model (Qualcomm, 2019)

Technical Skills

Languages: Python, C/C++
ML Frameworks: PyTorch, TensorFlow, HuggingFace
Core Research Areas: Computer Vision, Foundation Models, Self-Supervised Learning, Continual Learning, Multimodal Learning
Deployment and Systems: Docker, Ray, Weights & Biases
Libraries: NumPy, SciPy, Pandas, OpenCV

Service & Awards

Best Reviewer ECCV 2024

Reviewer: CVPR 2025, ECCV 2024, ICML, NeurIPS, ICLR 2023–2024, EMNLP 2021–2023