

Kutay Eroglu

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Istanbul, Turkey

OBJECTIVE

Computer Engineering M.Sc. candidate and incoming Ph.D. student at [Bogazici University](#), specializing in self-supervised visual representation learning. Focused on masked image modeling, joint-embedding predictive architectures, and biologically informed deep learning.

EDUCATION

- **Bogazici University** Fall 2026
Doctor of Philosophy in Computer Engineering (Incoming) Istanbul, Turkey
 - Admitted to the Ph.D. program; starting Fall 2026
- **Bogazici University** Expected Jun 2026
Master of Science in Computer Engineering Istanbul, Turkey
 - GPA: 3.57/4.00
- **Koc University** Graduated Jun 2022
Bachelor of Science in Computer Engineering Istanbul, Turkey
 - GPA: 3.07/4.00

EXPERIENCE

- **Bogazici University** Sep 2026 - Present
Graduate Research and Teaching Assistant Istanbul, Turkey
 - Assisting [CMPE354: Software Engineering](#), covering the software development lifecycle, engineering methodologies, and group project implementation.
- **Hitit** Oct 2022 - Sep 2025
Artificial Intelligence Engineer Istanbul, Turkey
 - Engineered and maintained [Pegasus Airlines'](#) marketing personalization stack, leveraging machine learning algorithms to enhance customer engagement and target 5 million customers per week.
 - Developed a flight delay prediction pipeline from scratch as a solo developer, covering feature engineering, modeling, continuous training, and product integration.
 - Led a team of 5 data scientists for 1 year, overseeing project delivery, Scrum events, agile board management, stakeholder communication, code reviews, and documentation.
 - Carried out literature reviews for projects that tackled problems without pre-defined solutions.
- **Kariyer.net** Mar 2021 - Nov 2021
Backend Development Intern Istanbul, Turkey
 - Developed a one-time password mechanism in the [Isin Olsun](#) web application, handling creation of necessary API endpoints and database tables.
 - Created an API endpoint for internal customers that allowed querying of user login history.

PATENTS AND PUBLICATIONS

C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, T=THESIS

- [C.1] K. Eroglu and B. Gökberk (2026). **Noise-guided Masking for Image-based Joint-Embedding Predictive Architectures**. In *Proc. 34th IEEE Signal Processing and Communications Applications Conference (SIU)*. IEEE. (Accepted)
- [T.1] K. Eroglu (2026). **Noise-guided Masking for Image-based Joint-Embedding Predictive Architectures**. Master's thesis, Bogazici University.

PROJECTS

- Noise-guided Masking for Joint-Embedding Predictive Architectures** Feb 2025 - Jun 2026
Master's thesis; I-JEPA, self-supervised learning, ImageNet-1K Accepted at IEEE SIU 2026
 - Proposed multi-noise masking, the first systematic study of noise-guided masking in a non-generative joint-embedding framework, integrating spectrally filtered noise maps with I-JEPA multi-block masking to guide patch removal inside context and target blocks.
 - On ImageNet-1K pre-training with ViT-B/16, improved the speed-accuracy trade-off in linear probing: 50.04% Top-1 accuracy vs. 49.1% for the multi-block baseline while reducing average pre-training iteration time by ≈26.8%.
 - Benchmarked against blockwise, rasterized, grid, and random masking baselines; ablations over patch removal ratio, context-block scale, backbone scale (ViT-S/B/L), and noise color showed consistent training speedups, with control experiments isolating intra-block patch removal as the source of gains.
- Impact of an Anti-Biomimetic Training Regimen on Neural Network Organization and Behavior** Oct 2025 - Jan 2026
Computer vision; biologically inspired visual development Bogazici University
 - Built on NeurIPS 2024 workshop work on biomimetic training, introducing an anti-biomimetic regimen that transitions from high-resolution, full-color inputs to blurry, achromatic (grayscale) inputs in the second half of training.
 - Compared standard (full-color throughout), biomimetic (blurry grayscale, then full-color), and anti-biomimetic (full-color, then blurry grayscale) regimens to isolate the role of temporal order in visual pathway organization.
 - Reconfirmed that visual pathway organization is driven by the temporal order of sensory experience, not the data alone: late-introduced blur failed to induce a global shape bias (magnocellular-like), with networks instead reinforcing existing texture detectors under degradation.
- Delay Prediction** Jun 2024 - Sep 2025
Predicting probability of flight delays Hitit
 - Developed end-to-end development and production pipelines encompassing data preparation, feature engineering, model training, inference, and data export.
 - Conducted a comprehensive literature review to evaluate existing modeling approaches and inform project strategy.
 - Performed ablation studies to identify and eliminate redundant features and model components, improving performance and efficiency.
 - Carried out exploratory data analysis (EDA) to uncover valuable features and determine the optimal modeling granularity.

GRANTS AND FUNDING

- TUBITAK EuroHPC National Access Call** 2026
Project: Noise-guided Masking for Joint-Embedding Predictive Architectures EuroHPC JU
 - Awarded 256,000 GPU-hours on MareNostrum 5 (Barcelona Supercomputing Center) through the national access programme coordinated by TUBITAK (Scientific and Technological Research Council of Turkey).

SKILLS

- Programming Languages:** Python, SQL, Java, C#, R
- ML & Data Science:** PyTorch, scikit-learn, LightGBM, pandas, NumPy, Matplotlib, SHAP
- MLOps & Tools:** Git, Docker, Airflow, MLflow, Cron, Linux
- Cloud:** Microsoft Azure
- Other:** LaTeX

CERTIFICATIONS

- Traditional Machine Learning** – DataCamp (41 hours) Jul 2024
- Big Data & Business Analytics (Expertise)** – Mindset Institute (84 hours) Apr 2024
- Recommender Systems** – Coursera (15 hours) May 2023
- Linear Algebra for Machine Learning** – Coursera (18 hours) Mar 2022

ADDITIONAL INFORMATION

Languages: Turkish (Native), English (Professional Working Proficiency)