Yusuf **Dalva**

Research & Teaching Assistant · Ph.D. Student

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Education

Ph.D. in Computer Science, Virginia Tech, Blacksburg, VA, United States

Aug. 2023 - June 2027 (Expected)

- Research focus: Controllability in diffusion models
- Under the supervision of Pinar Yanardag
- Related coursework: Embodied AI, Learning-based Computer Vision

M.S. in Computer Engineering, Bilkent University

Sep. 2020 - June 2023

- Thesis topic: Image-to-image Translation for Face Attribute Editing with Disentangled Latent Directions
- Under the supervision of Aysegul Dundar
- **Best Master Thesis Award** by IEEE Computer Society, Turkey Chapter
- Related coursework: Computer Vision, Deep Learning, Deep Generative Networks, Computer Graphics (CGPA: 4.00/4.00)
- Awarded **Department Scholarship** at the time of enrollment

B.Sc. in Computer Engineering, Bilkent University

Sep. 2016 - June 2020

- Graduation Project: DRIVision - Mobile-based Driving Assistance Solutions (**Data Science Award**)
- Related coursework: Object-Oriented Software Engineering, Algorithms, Operating Systems, Database Systems (CGPA: 3.67/4.00)
- Awarded **Merit Scholarship** in 2017, 2018, 2019

Publications

- Y. Dalva, H. Yesiltepe, and P. Yanardag, "LoRAShop: Training-free multi-concept image generation and editing with rectified flow transformers," in *Advances in Neural Information Processing Systems* ***(Spotlight - top 3%)***, 2025
- **Y. Dalva**, K. Venkatesh, and P. Yanardag, "Fluxspace: Disentangled semantic editing in rectified flow models," in *IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR)*, 2025
- **Y. Dalva** and P. Yanardag, "NoiseCLR: A contrastive learning approach for unsupervised discovery of interpretable directions in diffusion models," in *IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR)* ***(Oral - top 0.7%)***, 2024
- **Y. Dalva**, Y. Li, Q. Liu, *et al.*, "Layerfusion: Harmonized multi-layer text-to-image generation with generative priors," in *NeurIPS 2025 Workshop on Space in Vision-Language Embodied AI (SpaVLE)*, 2025
- K. Venkatesh, **Y. Dalva**, I. Lourentzou, *et al.*, "Context canvas: Enhancing text-to-image diffusion models with knowledge graph-based rag," *arXiv preprint arXiv:2412.09614*, 2024
- **Y. Dalva**, H. Yesiltepe, and P. Yanardag, "Gan-based transfer of interpretable directions for disentangled image editing in text-to-image diffusion models," in *NeurIPS 2025 Workshop on Generative and Protective AI for Content Creation (GenProCC)*, 2025
- H. Yesiltepe, **Y. Dalva**, and P. Yanardag, "The curious case of end token: A zero-shot disentangled image editing using clip," *arXiv preprint arXiv:2406.00457*, 2024
- **Y. Dalva**, H. Pehlivan, O. I. Hatipoglu, *et al.*, "Image-to-Image Translation with Disentangled Latent Vectors for Face Editing," in *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2023
- **Y. Dalva**, S. F. Altındiş, H. Pehlivan, *et al.*, "Benchmarking the Robustness of Instance Segmentation Models," in *IEEE Transactions on Neural Networks and Learning Systems*, 2023
- **Y. Dalva**, S. F. Altındiş, and A. Dundar, "VecGAN: Image-to-Image Translation with Interpretable Latent Directions," in *European Conference on Computer Vision*, Springer, 2022, pp. 153–169
- H. Pehlivan, **Y. Dalva**, and A. Dundar, "StyleRes: Transforming the Residuals for Real Image Editing with StyleGAN," in *IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR)*, 2023
- S. F. Altindis, A. Meric, **Y. Dalva**, *et al.*, "Refining 3d human texture estimation from a single image," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2024

Experience

Research Intern, Snap Inc. *May 2025 - Dec. 2025*

- Mentors: Gordon Qian, Or Patashnik, Daniel Cohen-Or, Kfir Aberman, Jackson Wang, Sergey Tulyakov
- Developed a multi-subject composition model that works with **image canvas inputs**, to both enable **spatial control** over the composition and enable the model to take **multi-concept inputs in a memory efficient way**

Research Scientist/Engineer Intern, Adobe Inc. *May 2024 - Aug. 2024*

- Mentors: Yijun Li, Qing Liu, Nanxuan Zhao, Jianming Zhang, Zhe Lin
- Developed an **inference time harmonization** approach for layered image generators. Introduced the concept of **attention-level blending** for layered images to achieve layered compositions with interactions between layers.

Teaching Assistant, Virginia Tech *Jan. 2024 - May 2025*

- Assisted Courses: **AI Tools for Software Engineering**, **Intermediate Software Design and Engineering**
- Assisted students on projects on **software engineering principles** and connecting them with **ChatGPT-related tools**.

Teaching Assistant, Bilkent University *Sep. 2020 - June 2023*

- Won **Outstanding Teaching Assistant** award **3** times (2021, 2022, 2023)
- Gave tutorials on **Google Colab** and **PyTorch**
- Assisted Courses: **Introduction to Machine Learning**, Operating Systems, Computer Organization, **Algorithms and Programming I**

Software Engineer Intern, Atlassian, Opsgenie *July 2019 - Sep. 2019*

- Engaged in projects as a part of the Business Operations team
- Translated legacy records to Atlassian database
- Developed **AWS Lambdas** for subscription actions

Achievements, Honors & Awards

2025	**Amazon Fellowship** Selected as one of two fellows, as a part of Amazon - Virginia Tech Initiative in Efficient and Robust Machine Learning
2023	**Best Master Thesis Award** Selected as the best master thesis by IEEE Computer Society Turkey Chapter
2021 - 2023	**Outstanding Teaching Assistant** Chosen as one of the three most successful teaching assistants in the Department of Computer Engineering of Bilkent University
2020	**Department Scholarship** Full scholarship by the Department of Computer Engineering of Bilkent University for M. Sc. studies
2017 - 2019	**Merit Scholarship** Partial scholarship for B. Sc. studies has been awarded due to outstanding academic performance

Conferences & Presentations

IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR) *Nashville, TN*

Poster Presentation: "FluxSpace: Disentangled Semantic Editing in Rectified Flow Models" *June 2025*

IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR) *Seattle, WA*

Oral + Poster Presentation: "NoiseCLR: A Contrastive Learning Approach for Unsupervised Discovery of Interpretable Directions in Diffusion Models" *June 2024*

IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR) *Vancouver, Canada*

Paper Poster Presentation: "StyleRes: Transforming the Residuals for Real Image Editing with StyleGAN" *June 2023*

European Conference on Computer Vision *Tel Aviv, Israel*

Paper Poster Presentation: "VecGAN: Image-to-image translation with interpretable latent directions" *Sep. 2022*