

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**, G. G. Qian, M. Goldenberg, *et al.*, *Canvas-to-image: Compositional image generation with multimodal controls*, 2025. arXiv: **2511.21691** [cs.CV]. [Online]. Available: <https://arxiv.org/abs/2511.21691>
- **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. Altındış, 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. Altındış, 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

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 diffusion framework enabling **spatially controllable composition** from canvas inputs and efficient multi-concept conditioning, incorporating **vision-language representations** to enhance **semantic understanding in generation**
- 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