



Zander W. Blasingame

✉ blasinzw@clarkson.edu  zblasingame.github.io in zblasingame  zblasingame

Education

Clarkson University <i>Ph.D. in Electrical and Computer Engineering</i>	2020 - 2025
<ul style="list-style-type: none"> Adversarial ML, stochastic calculus, numerical methods, and differential equations in machine learning Advisor: Chen Liu 	
Clarkson University <i>M.Sc. in Electrical and Computer Engineering</i>	2018 - 2020
Clarkson University <i>B.Sc. in Computer Engineering</i>	2015 - 2018

Publications

- [1] **Zander W. Blasingame** and Chen Liu. “Greed is Good: Guided Generation from a Greedy Perspective”. In: *arXiv preprint arXiv:2502.08006* (Feb. 2025). URL: <https://arxiv.org/abs/2502.08006>.
- [2] **Zander W. Blasingame** and Chen Liu. “Reversible Solvers for Diffusion Models”. In: *arXiv preprint arXiv:2502.08834* (Feb. 2025). URL: <https://arxiv.org/abs/2502.08834>.
- [3] **Zander W. Blasingame** and Chen Liu. “AdjointDEIS: Efficient Gradients for Diffusion Models”. In: *Advances in Neural Information Processing Systems*. Ed. by A. Globerson, L. Mackey, D. Belgrave, A. Fan, U. Paquet, J. Tomczak, and C. Zhang. Vol. 37. Curran Associates, Inc., 2024, pp. 2449–2483. URL: https://proceedings.neurips.cc/paper_files/paper/2024/file/04badd3b048315c8c3a0ca17eff723d7-Paper-Conference.pdf.
- [4] **Zander W. Blasingame** and Chen Liu. “Fast-DiM: Towards Fast Diffusion Morphs”. In: *IEEE Security & Privacy* 22.4 (2024), pp. 103–114. DOI: [10.1109/MSEC.2024.3410112](https://doi.org/10.1109/MSEC.2024.3410112) .
- [5] **Zander W. Blasingame** and Chen Liu. “Greedy-DiM: Greedy Algorithms for Unreasonably Effective Face Morphs”. In: *2024 IEEE International Joint Conference on Biometrics (IJCB)*. 2024, pp. 1–11. DOI: [10.1109/IJCB62174.2024.10744517](https://doi.org/10.1109/IJCB62174.2024.10744517) .
- [6] **Zander W. Blasingame** and Chen Liu. “Leveraging Diffusion for Strong and High Quality Face Morphing Attacks”. In: *IEEE Transactions on Biometrics, Behavior, and Identity Science* 6.1 (2024), pp. 118–131. DOI: [10.1109/TBIOM.2024.3349857](https://doi.org/10.1109/TBIOM.2024.3349857) .
- [7] Richard E. Neddo, **Zander W. Blasingame**, and Chen Liu. “The Impact of Print-Scanning in Heterogeneous Morph Evaluation Scenarios”. In: *2024 IEEE International Joint Conference on Biometrics (IJCB)*. 2024, pp. 1–10. DOI: [10.1109/IJCB62174.2024.10744441](https://doi.org/10.1109/IJCB62174.2024.10744441) .
- [8] Chutitep Woralert, Chen Liu, and **Zander Blasingame**. “Towards Effective Machine Learning Models for Ransomware Detection via Low-Level Hardware Information”. In: *Proceedings of the 13th International Workshop on Hardware and Architectural Support for Security and Privacy*. HASP ’24. Association for Computing Machinery, 2024, pp. 10–18. ISBN: 9798400712210. DOI: [10.1145/3696843.3696847](https://doi.org/10.1145/3696843.3696847) . URL: <https://doi.org/10.1145/3696843.3696847>.
- [9] Chutitep Woralert, Chen Liu, and **Zander Blasingame**. “HARD-Lite: A Lightweight Hardware Anomaly Realtime Detection Framework Targeting Ransomware”. In: *IEEE Transactions on Circuits and Systems I: Regular Papers* 70.12 (2023), pp. 5036–5047. DOI: [10.1109/TCSI.2023.3299532](https://doi.org/10.1109/TCSI.2023.3299532) .
- [10] Chutitep Woralert, Chen Liu, **Zander Blasingame**, and Zhiliu Yang. “A Comparison of One-class and Two-class Models for Ransomware Detection via Low-level Hardware Information”. In: *2023 Asian Hardware*

Oriented Security and Trust Symposium (AsianHOST). 2023, pp. 1–6. DOI: [10.1109/AsianHOST59942.2023.10409333](https://doi.org/10.1109/AsianHOST59942.2023.10409333) [↗](#).

- [11] Chutitep Woralert, **Zander Blasingame**, and Chen Liu. “HARD-Lite: A Lightweight Hardware Anomaly Realtime Detection Framework Targeting Ransomware”. In: *2022 Asian Hardware Oriented Security and Trust Symposium (AsianHOST)* (2022).
- [12] **Zander Blasingame** and Chen Liu. “Leveraging Adversarial Learning for the Detection of Morphing Attacks”. In: *2021 IEEE International Joint Conference on Biometrics (IJB)* (2021), pp. 1–8. DOI: [10.1109/IJB52358.2021.9484383](https://doi.org/10.1109/IJB52358.2021.9484383) [↗](#).
- [13] **Zander Blasingame**, Chen Liu, and Xin Yao. “Feature Creation Towards the Detection of Non-control-Flow Hijacking Attacks”. In: *Artificial Neural Networks and Machine Learning – ICANN 2021*. Ed. by Igor Farkaš, Paolo Masulli, Sebastian Otte, and Stefan Wermter. Cham: Springer International Publishing, 2021, pp. 153–164. ISBN: 978-3-030-86362-3.
- [14] Gildo Torres, Zhiliu Yang, **Zander Blasingame**, James Bruska, and Chen Liu. “Detecting Non-Control-Flow Hijacking Attacks Using Contextual Execution Information”. In: *Proceedings of the 8th International Workshop on Hardware and Architectural Support for Security and Privacy*. HASP ’19. Phoenix, AZ, USA: Association for Computing Machinery, 2019. ISBN: 9781450372268. DOI: [10.1145/3337167.3337168](https://doi.org/10.1145/3337167.3337168) [↗](#). URL: <https://doi.org/10.1145/3337167.3337168>.
- [15] Chen Liu, Zhiliu Yang, **Zander Blasingame**, Gildo Torres, and James Bruska. “Detecting Data Exploits Using Low-Level Hardware Information: A Short Time Series Approach”. In: *Proceedings of the First Workshop on Radical and Experiential Security*. RESEC ’18. Incheon, Republic of Korea: Association for Computing Machinery, 2018, pp. 41–47. ISBN: 9781450357579. DOI: [10.1145/3203422.3203433](https://doi.org/10.1145/3203422.3203433) [↗](#). URL: <https://doi.org/10.1145/3203422.3203433>.

Experience

Graduate Research Assistant

2018 - Present

Clarkson University

Potsdam, NY

- Studied the problem of guided generation with diffusion models
- Created bespoke ODE/SDE solvers for the continuous adjoint equations for diffusion models call Adjoint-DEIS
- Proposed a novel family of face morphing algorithms called **Diffusion Morphs (DiM)**
- Explored the training of diffusion models with a deterministic forward flow
- Developed a new face morph detection algorithm using adversarial learning
- Developed a new GAN architecture which a shared critic and encoder network

Undergraduate Research Assistant

2016 - 2018

Clarkson University

Potsdam, NY

- Developed machine learning algorithms for the detection of malware using low-level hardware information
- Studied the theory of semi-supervised anomaly detection problems

Engineering Intern

Summer 2016

Griffiss Institute - Air Force Research Laboratory

Rome, NY

- Generated meta-statistics for several machine learning datasets
- Designed android application to display data from a backend server

Engineering Intern

Summer 2014

InterOperability Laboratory - UNH



Durham, NH

- Designed a custom Linux image for embedded systems using the Yocto Project
- Created a web application capable of monitoring and maintaining server processes

Invited Talks

Mila - Quebec Artificial Intelligence Institute <i>AdjointDEIS: Efficient Gradients for Diffusion Models</i>	Jan 2025 Montréal, Canada
Transatlantic Dialogue on Presentation Attack Detection <i>Diffusion Morphs (DiM): Diffusion is all you need for highly effective face morphs</i>	Nov 2024 Washington, D.C.
Journal Presentation - IEEE IJCB <i>Diffusion Morphs (DiM): Leveraging Diffusion for Strong and High-Quality Face Morphing Attacks</i>	Sep 2024 Buffalo, NY
Idiap Research Institute <i>Diffusion Morphs (DiM): The Power of Iterative Generative Models for Attacking FR Systems</i>	Jul 2024 Martigny, Switzerland
CITeR and DSA Webinar <i>Diffusion for the Generation of Face Morphs</i>	Feb 2024 Online
International Face Performance Conference - NIST <i>Face Morph Generation and Attack Detection</i>	Nov 2022 Online
International Face Performance Conference - NIST <i>Morph Attack Detection and Mitigation Projects</i>	Oct 2020 Online

Projects

Efficient Gradients for Diffusion Models - AdjointDEIS • Efficient algorithms for backpropagation in diffusion models for guided generation and related tasks • Tools Used: Python, PyTorch	AdjointDEIS 
Diffusion Morphs (DiM) • Developed a family of SOTA face morphing algorithms using diffusion models • Tools Used: Python, PyTorch	Greedy-DiM 

Research Funding

Primary Student Investigator

Explainable Image Quality with Transformer-based Models Funding from the Center for Identification Technology Research a NSF-IUCRC Role: Helped draft grant proposal, primary student investigator PIs: Chen Liu	2023 - 2024
Towards the Creation of a Large Dataset of High-Quality Face Morphs Funding from the Center for Identification Technology Research a NSF-IUCRC Role: Helped draft Clarkson's portion of grant proposal, primary student investigator at Clarkson University PIs: Chen Liu, Stephanie Schuckers, Xin Li, Jeremy Dawson, Nasser Nasrabadi, David Doermann, Srirangaraj Setlur, Siwei Lyu, Xiaoming Liu, Sébastien Marcel	2021 - 2024
Comparative Detection of Facial Image Manipulation Techniques Funding from the Center for Identification Technology Research a NSF-IUCRC Role: Helped draft grant proposal, primary student investigator PIs: Chen Liu	2020 - 2022
Adversarial Learning Based Approach Against Face Morphing Attacks Funding from the Center for Identification Technology Research a NSF-IUCRC Role: Helped draft grant proposal, primary student investigator PIs: Chen Liu	2019 - 2021

Awards and Honors

IJCB Doctoral Consortium	2024
Clarkson Presidential Scholar	2015 - 2018
Best Oral Presentation for Software Engineering - Clarkson RAPS	2017

Teaching

Instructor <i>Griffiss Institute</i>	2020 - 2024 <i>Rome, NY</i>
<ul style="list-style-type: none">• Taught and co-designed the introduction to CyberSecurity Summer Camp for advanced high school students	
Graduate Teaching Assistant <i>Clarkson University</i>	2018 - 2021 <i>Potsdam, NY</i>
<ul style="list-style-type: none">• Electrical Science (ES 250)• Introduction to Digital Design (EE 264)• Electrical and Computer Engineering Sophomore Lab (EE 211)	
Undergraduate Teaching Assistant <i>Clarkson University</i>	2016 - 2018 <i>Potsdam, NY</i>
<ul style="list-style-type: none">• Software System Architecture (EE 462)• Differential Equations (MA 232)	

Professional Services

Reviewer

International Conference on Machine Learning (ICML)	2025
International Conference on Learning Representations (ICLR)	2025
International Conference on Artificial Intelligence and Statistics (AIS-TATS)	2025
Neural Information Processing Systems (NeurIPS)	2024
IEEE International Joint Conference on Biometrics (IJCB)	2024
IEEE International Conference on Pattern Recognition (ICPR)	2024
IEEE International Conference on Mobility: Operations, Services, and Technologies (MOST)	2023 - 2024
International Workshop on Programming Models and Applications for Multicores and Manycores (PMAM)	2022 - 2023
International Conference on Artificial Neural Networks (ICANN)	2021
IEEE International Symposium on Workload Characterization	2020
IEEE International Conference on Biometrics: Theory, Applications and Systems (BTAS)	2019
IEEE International Symposium on Parallel and Distributed Processing with Applications	2018

Skills

Languages: Python, C/C++, Java, Javascript, Bash, MATLAB, VHDL

Frameworks: TensorFlow, Pytorch, Numpy, Scipy, Matplotlib, Plotly, Pandas, Jax

Tools: Vim, Git, Linux, Docker, LaTeX

Audio: Over a decade of experience as a FOH engineer including theater productions and worship services