ANURAG SARKAR ⊠ sarkar.an@northeastern.edu � Personal Site ☎ Google Scholar ♀ Github ☐ LinkedIn ⊵ Full CV
EDUCATION Northeastern University, PhD, Computer Science9/2016-8/2023Thesis: Learning Latent Representations for Controllable Combinational Creativity and Game Design9/2016-8/2023
Northeastern University, MS, Computer Science9/2016-5/2018St. Xavier's College, MSc, Computer Science2014-16West Bengal University of Technology, Bachelor of Computer Applications (BCA)2011-14
EXPERIENCE Microsoft Research, Research Intern, MSR New York City 5/2023-8/2023 • Worked on a vision transformer-based architecture for learning player style representations and style-based generative models of player actions in chess <i>Technologies</i> : Python, PyTorch, Tensorflow/Keras, AzureML
Electronic Arts, Gameplay Software Engineer Intern, EA Tiburon 9/2022-12/2022 • Trained supervised ML models (XGBoost/neural networks) for accelerating AI QB decision-making/passing in Madden NFL 9/2022-12/2022 • Built interactive tools for visualization of model predictions based on user inputs 7 Technologies: C++, Python, PyTorch, Streamlit, Bokeh, Perforce 8
Northeastern University, Teaching Assistant 1/2023-4/2023 DS4400: Machine Learning 1 1/2023-4/2023 • Intro ML course covering regression, classification, clustering, decision trees, random forests and deep learning 1/2023-4/2023 • Answered student questions online, held office hours and graded assignments 1/2023-4/2023
DS3000: Foundations of Data Science 5/2022-6/2022 • Intro data science course in Python covering the use of pandas, numpy, matplotlib and scikit-learn 5/2022-6/2022 • Performed code walkthroughs for weekly class assignments, held office hours and graded assignments 5/2022-6/2022
Zynga, Data Science Intern, Applied AI 5/2021-8/2021 • Extended existing game description language to support new mechanics for the puzzle game Spell Forest 5/2021-8/2021 • Worked on refactoring simulation framework, focusing on interfacing with different gameplay agents 5/2021-8/2021 <i>Technologies</i> : Unity/C#, JSON, Python 5/2021-8/2021
 Northeastern University, Research Assistant 9/2016-5/2021, 8/2021-4/2022 Procedural content generation and generative game design tasks via machine learning, using variational autoencoders (VAE) Dynamic difficulty adjustment via matchmaking using PVP rating systems and skill chains, funded by the NSF [link] Tech: Python, Unity/C#, R, PyTorch, Jupyter, Google Cloud, Amazon MTurk, AWS DynamoDB, Javascript, HTML/CSS
SELECTED PUBLICATIONSTOG 2023A. Sarkar, S. Cooper: Latent Combinational Game DesignTOG 2023A. Sarkar, S. Cooper: tile2tile: Learning Game Filters for Platformer Style TransferAIIDE 2022A. Sarkar, S. Cooper: Procedural Content Generation using Behavior Trees (PCGBT)EXAG 2021A. Sarkar, S. Cooper: Generating and Blending Game Levels via Quality-Diversity in the Latent Space of a VAEFDG 2021Z. Yang, A. Sarkar, S. Cooper: Game Level Clustering and Generation using Gaussian Mixture VAEsAIIDE 2020A. Sarkar, S. Cooper: Towards Game Design via Creative Machine Learning (Best Paper Nomination)COG 2020A. Sarkar, Game Design using Creative AINeurIPS MLCD 2019A. Sarkar, S. Cooper: Transforming Game Difficulty Curves using Function CompositionCHI 2019A. Sarkar, Z. Yang, S. Cooper: Controllable Level Blending between Games using Variational AutoencodersEXAG 2011A. Sarkar, M. Williams, S. Deterding, S. Cooper: Engagement Effects of Player Rating System-based MatchmakingFDG 2017for Level Ordering in Human Computation Games (Best Paper Honorable Mention)C017

SKILLS

Programming Languages: Python, C++, C#, Java, R, Javascript, SQL Misc: PyTorch, Tensorflow/Keras, Unity, Jupyter, Git, HTML/CSS, Streamlit, Google Cloud Platform, Amazon MTurk, AWS

SELECTED HONORS & AWARDS

Outstanding Graduate Student Award in Research Nomination, Northeastern University2022, 2023Graduate Thesis/Dissertation Research Grant, Northeastern University2021-23IEEE Computational Intelligence Society (CIS) Grant, IEEE Conference on Games2019, 2020Father Jacques de Bonhome S.J. Memorial Gold Award, MSc. Computer Science Class of 2016 Valedictorian2016NSHM Medal of Merit, BCA Class of 2014 Valedictorian2014