

Abhijeet Krishnan

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Education

- **North Carolina State University** Raleigh, NC, USA
PhD, Department of Computer Science Jan 2018 - present
 - Relevant courses: Introduction to Game Engine Design, Advanced Topics in Machine Learning, Experimental Statistics for Engineers I
- **North Carolina State University** Raleigh, NC, USA
Master of Science in Computer Science (en-route), Department of Computer Science Jan 2018 - Dec 2020
- **Visvesvaraya National Institute of Technology** Nagpur, MH, India
Bachelors of Technology, Dept. of Computer Science and Engineering Aug 2013 - May 2017
 - Relevant courses: Statistics and Optimization Techniques, Artificial Intelligence, Neuro-fuzzy Techniques

Work Experience

- **Zynga Inc.** Remote
Data Science Intern May 2021 - Aug 2021
 - Extended the grammar and interpreter of a game-description language used to develop the mobile game Spell Forest to enable expressing new game modes.
 - Redesigned an existing simulator framework used for level testing for scalability and testing of game levels with different agent behaviours.
 - Reference: Yang Wen
- **Principles of Expressive Machines (POEM) Lab** Raleigh, NC, USA
Graduate Research Assistant Jan 2019 - Dec 2019
 - Advisor: Dr. Chris Martens
 - Investigating rule-based models for modeling players of games which account for player mental models. We aim to explain and predict player behavior using rule-based player models.
- **Knexus Research Corp.** National Harbour, MD, USA
AI Intern June 2019 - Aug 2019
 - Designed and developed a system for generating children's stories.
 - Invented a story graph structure to generate infinitely varying plots from a bank of mini-plots.
 - Used an automated planning tool for narrative generation.
 - Presented the technical details of the system to an audience of senior software engineers.
 - References: Dr. Michael Floyd, Justin Karneeb
- **Goldman Sachs** Bengaluru, KA, India
Summer Employee May 2016 - Aug 2016
 - Developed and tested a patch for a bug in a 1500+ line C++ codebase.
 - Developed a real-time dashboard to monitor server statistics in Javascript and PHP.
 - Developed a Python+bash automation script as part of an intra-division hackathon.
 - Reference: Nitin Bansal

Publications

- **Krishnan, Abhijeet** and Chris Martens. "Synthesizing Chess Tactics from Player Games." In *Workshop on Artificial Intelligence for Strategy Games (SG) and Esports Analytics (EA), 18th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*. 2022.
- **Krishnan, Abhijeet** and Chris Martens. "Towards the Automatic Synthesis of Interpretable Chess Tactics." In *Explainable Agency in Artificial Intelligence Workshop, 36th AAAI Conference on Artificial Intelligence*. 2022.
- **Krishnan, Abhijeet**, Aaron Williams, and Chris Martens. "Towards Action Model Learning for Player Modeling." *Proceedings of the AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*. Vol. 16. No. 1. 2020.

Academic Service and Involvement

- **Reviewing and Program Committee Membership**

- International Conference on the Foundations of Digital Games 2022
- AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment 2021-22
- IEEE Conference on Games 2019-22
- AAAI Experimental AI in Games, AIIDE Workshop 2020
- IEEE Symposium Series on Computational Intelligence 2020

Academic Projects

- **Player Modelling using Gameplay Video Classification** Jan 2019 - Apr 2019
Artificial Intelligence II, CSC 720
 - Designed and trained an ML model to classify gameplay videos based on player behaviour.
 - Developed a classifier based on a retrained Inception v3 ConvNet followed by an LSTM in Tensorflow.
 - Trained and tested the model on the Google Colab platform.
 - Achieved a test accuracy of 93%.
- **Level Generation using ASP for Laserverse** Oct 2018 - Dec 2018
Generative Methods for Game Design, CSC 791
 - Designed a level generator for a puzzle game.
 - Used Answer Set Programming to model game rules.
 - Performed a quantitative evaluation of the expressive range of the generator.

Skills

Languages: Python, C++, C, bash

Applications: git

Libraries: TensorFlow

Activities and Leadership

- **Competitive Coding** Aug 2015 - present
 - Within top 2% in India on Codechef, within top 5% in India on Codeforces
 - Winner of Codebreak 2016, an internally held coding contest for interns at Goldman Sachs.
- **Literary and Magazine Affairs Secretary** Nagpur, MH, India
Visvesvaraya National Institute of Technology Aug 2016 - May 2017
 - Recruited and led a team of student designers and writers to produce the annual institute magazine, Insight 2017
 - Planned and organized multiple annual institute events, such as Freshers '16 and Institute Gathering '17
- **Training & Placement Affairs Coordinator, CSE** Nagpur, MH, India
Visvesvaraya National Institute of Technology Aug 2015 - May 2017
 - Organized skill-building and expert talks for fellow students.
 - Assisted 7+ companies with their on-campus hiring process.