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.
- **Krishnan, Abhijeet** and McAllister, David F. "Stereo Pair Colorization Using Exemplar-based Techniques" Unpublished manuscript, North Carolina State University, Raleigh, NC.

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**
  Artificial Intelligence II, CSC 720 *Jan 2019 - Apr 2019*
  - 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**
  Generative Methods for Game Design, CSC 791 *Oct 2018 - Dec 2018*
  - 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.