SASHA AZAD

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EDUCATION

M.S. COMPUTER SCIENCE **GPA : 3.71**

Georgia Institute of Technology

Specialization: Interactive Intelligence. **Relevant Courses Done:** Artificial Intelligence, AI Storytelling in Virtual Worlds, Knowledge Based AI, Game AI, Computational Creativity, Information Visualization, Interactive Narrative, Artificial Intelligence & Science Fiction, Mobile Apps & Services, Augmented Reality, Video Game Design.

B.E. COMPUTER ENGINEERING **GPA : 3.8**

University of Mumbai ***First Class with Distinction***

Electives: Artificial Intelligence & Soft Computing. **Relevant Courses Done:** Artificial Intelligence, Soft Computing, Data Structures & Files, Discreet Structures & Graph Theory, Analysis of Algorithms & Design, Data Warehouse & Mining, Theory of Computer Science, Computer Graphics, Advanced Database Management Systems.

WORK EXPERIENCE

GRADUATE RESEARCH ASSISTANT: Campus APIs & Mobility Group **Jan '15 - May '16**

Research Networks & Operations Center, Georgia Institute of Technology

Advisor: Dr. Russ Clark & Dr. Matt Sanders. **Description:** Worked with campus research groups to open data, facilitate student innovation, and develop new modes of interaction. Built applications for the GT Journey initiative and GTMobile portal. Worked with student groups harnessing the APIs created from conception and design to entrepreneurial launches of their project. Frequently lead workshops & tutorials on web mobile development, Unity, Django, and REST API development.

ENTREPRENEURIAL LEAD: Design & Intelligence Lab **May '15 - Dec '15**

National Science Foundation (NSF) iCorps Grant Recipient

Principal Investigator: Dr. Ashok Goel & Harold Solomon. **Description:** R&D for a knowledge extraction tool that is capable of extracting deep understanding from text to improve the precision, relevance and fertility of retrieved knowledge using direct matching & analogical reasoning. The information extraction is aided by the use of domain knowledge and proprietary knowledge representation to annotate extracted information using a structure-behaviour-function modeling.

CONSULTANT: Global Mobility Group **Aug '12 - Jun '14**

Capgemini India Pvt. Ltd. | Software Engineer('12), Senior Software Engineer('13), Consultant('13)

Manager: Ramakant Satam. **Description:** Developed several native, web and hybrid mobile applications for iOS & Android devices. Designed an application that allowed for consumer & enterprise clients to access visualizations of various enterprise data via mobile applications to enable cross-domain collaboration. Helped initiate a Global Mobility Group and device management system for enterprise devices.

APPLICATION ANALYST: Global Mobility Group **Jun '11 - Aug '12**

Bayer Business Services | Software Engineer('11), Application Analyst ('12)

Manager: Ramakant Satam. **Description:** Initiated the first mobile development team in Bayer. Trained & integrated more employees into the team. Developed wireframes and interactive prototypes for Enterprise & Consumer applications. Launched several mobile applications to the Apple App Store & the Google Play Store in India, Japan, UK & the United States. Worked primarily on Sencha Touch, Objective C, Augmented Reality, Google Maps, QR Codes, and Cordova.

PUBLICATIONS AND PRESENTATIONS

PUBLICATIONS

Sasha Azad, Carl Saldanha, Cheng Hann Gan, Mark O. Riedl, "Procedural Level Generation for Augmented Reality Games." *Twelfth Artificial Intelligence and Interactive Digital Entertainment Conference*. 2016. (*In review)*

WORKSHOP AND POSTER PRESENTATIONS

Sasha Azad, Carl Saldanha, Cheng Hann Gan, Mark O. Riedl, "Artificial Intelligence in Mixed Reality Games." *Experimental AI in Games Workshop, Twelfth Artificial Intelligence and Interactive Digital Entertainment Conference*. 2016. (*In review)*

Spencer Rugaber, **Sasha Azad,** Shruti Bhati, Vedanuj Goswami, Ashok Goel, "Interactive Biologically Inspired Design." Presented at *Graphics, Visualization and Usability Demo, Georgia Institute of Technology. 2016.*

Jing Dong, Takahiko Tsuchiya, Shanu Salunke, **Sasha Azad,** *"Detection of Substitution Errors on Mini-QWERTY Keyboards."* Presented at the Artificial Intelligence Poster Demo, Georgia Institute of Technology. 2014

Sasha Azad, Shanu Salunke, Claire Bergman, Timothy Storm, *"Creating a Player-Centric Dynamic Game AI."* Presented at the Artificial Intelligence Poster Demo, Georgia Institute of Technology. 2014

SKILLS

Programming	Python (Proficient), HTML5/Javascript (Proficient), SQLite (Proficient), Java, C++, Objective C, MATLAB
Technologies	Django (Proficient), Sencha Touch (Proficient), D3, LATEX, iOS, Android, Layar, Cordova
Design & Prototyping	Wireframes, Omnigraffle, Keynote, Storyboards

PROJECTS

ENTERTAINMENT INTELLIGENCE DOMAIN

Augmented Reality Super Mario Bros *(Masters Project)*: Entertainment Intelligence Lab — **Sep '15 - May '16**

Advisor: Dr. Mark Riedl. **Description:** Designed and developed an augmented reality interactive experience that responds to real time changes in the user's environment. The interaction scans the room using a Kinect and performs surface detection, using a combination of Game AI, Player Modeling and PCG to dynamically generate levels for the user.

Characterizing the Marvel Comic Universe (Information Visualization course): — **Sep '15 - Dec '15**

Designed a interactive visualization in D3 for Marvel comic book enthusiasts and aggregate media analysts to explore the vast variety of Marvel characters, their relationships with one another and to their universe. Developed a relational database and REST APIs in Django.

Creation of a Player-Centric Dynamic Game AI (Artificial Intelligence course): — **Mar '14 - May '14**

Developed an AI gameplay agent to play the Isolation board game on an 8×8 grid. The agent used player modeling and clustering to judge the personality type and skill level of the human player and make moves to match the player's characterization. Implemented a Random Walk Minimax with Alpha Beta.

NARRATIVE & ARTIFICIAL INTELLIGENCE DOMAIN

Cognopsi - A Knowledge Extraction Tool: Design Intelligence Lab — **Aug '15 - Present**

Research and development on a knowledge extraction tool that extracts deep understanding from text to improve the precision, relevance and fertility of retrieved responses by direct matching & analogical reasoning.

Jill - An Intelligent Research Assistant (Computational Creativity course): — **Feb '15 - May '15**

Developed an interactive concept search engine using IBM Watson and Python that could comb through scientific papers and journals to aid the literature review process. The engine also tracked the cognitive research thought process of the user.

Multiplayer AI Narrative & Quest Generator (AI Storytelling in Virtual Worlds course): — **Sep '14 - Dec '14**

Developed a Python AI Simulator that generated a murder mystery (with simulated motives) given a set of characters. The AI Game Master controlled when to divulge clues & plot-lines to players. A quest generator was created to improve gameplay.

Intelligent Self Learning Conversational Agent (Bachelor's Research Project): — **Aug '10 - May '11**

Developed an AI Chatterbot that attempted to beat the Turing Test and expanded it's knowledge base from user interaction and the internet using case-based reasoning and semantic frames.

INTERACTIVE INTELLIGENCE DOMAIN

Unlock the Box (Independent - Civic Engagement Domain): — **Oct '15 - Present**

Developed an API to improve voter turnout and encourage civic participation. Targeted the rising American electorate who comprise of 62% of the voting age population in Georgia yet only 53% of registered voters. Currently tying up with New Georgia Project's Director to implement the Voting API for the State of Georgia.

Detection of Substitution Errors on Mini-QWERTY Keyboards (Artificial Intelligence course): — **Aug '14 - Dec '14**

Compared standard classification techniques for the detection of substitution errors with the detection in the Automatic Whiteout algorithm. Performed feature selections to reduce the dimension of features and speed the algorithms up.

Solving Raven's Progressive Matrices (Knowledge Based AI course): — **Aug '14 - Dec '14**

Designed & developed an AI agent in Python that could solve the 2×1, 2×2, 3×3 Visual IQ test problems using Knowledge Based AI techniques. Four projects were developed individually, building on each other to solve the propositional, imagistic, and multimodal representations of the RPM with increasing complexity.

Semantic Rule Based IFC Parser (Independent - Architecture Domain): — **Aug '14 - Sep '14**

Developed an algorithm that allowed an architect to describe a semantic knowledge based rule set to minimize the slab pieces generated during slab segmentation. The algorithm adhered to user preferences and limitations outputting an enriched IFC file.

MOBILITY DOMAIN

Bayer Eco Commercial Building App (Bayer - Mobile Information Visualization): — **Oct '11 - Jan '12**

Developed backend in Java/JSP to collect real-time data from an energy efficient building. Created interactive charts to visualize the data on an iPad interface developed in Sencha Touch. The application won many accolades at the Global Mobility Conference in Leverkusen.