Nic Junius

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WORK EXPERIENCE

Expressive AI Engineer; UC Santa Cruz (January 2022 - present)

The Mimic social navigation simulator is a robot and crowd simulation tool built in Unity using C#.

Responsibilities:

- Developed simulated character behavior.
- Implemented feature requests for AI systems.
- Built authoring pipelines and frameworks for character behavior and personalities.
- Tested, debugged, and profiled AI code.

Expressive AI Architect; UC Santa Cruz (September 2018 - present)

Puppitor is a game interface and character simulation library. Python and C# versions available.

Responsibilities:

- Developed theatrical model of character acting.
- Designed system architecture to implement the character acting model.
- Implemented system design in code and refined the library based on game design needs.
- Created an embedded domain specific language to define character actions and expressions.
- Developed debugging and testing tools to aid in authoring characters with the system.

Project Lead, Narrative Designer, Engineer; UC Santa Cruz (September 2018 - present)

Tracks in Snow is an interactive drama visual novel developed using Python, Ren'Py, and Puppitor.

Responsibilities:

- Led the design of a novel interactive narrative experience rooted in character acting.
- Created feedback systems for human and AI controlled characters to support gameplay goals.
- Coordinated with artists and composers to create in game assets supporting the AI systems.
- Sole writer of the game's storyline and dialogue scripts.
- Built and maintained pipelines for rapidly adding narrative content to the rest of the game.

Lead Writer; UC Santa Cruz (October 2017 - September 2020)

Academical is a choice-based interactive fiction training game for graduate students built in Twine.

Responsibilities:

- Developed style guidelines for other writers.
- Gave direction and feedback to drafts.
- Outlined narrative structure for scenarios.
- Edited for voice and consistency across scenarios.

Doctoral Researcher; UC Santa Cruz (September 2017 - present)

Independently pursue research on expressive AI systems and narrative design.

Responsibilities:

- Published papers discussing AI system design and architecture.
- Published award winning papers discussing and critiquing narrative design.
- Advised on research-based interactive fiction projects.
- Advised on student game projects.

EDUCATION

PhD Computational Media | University of California, Santa Cruz (2021 - present)
MFA Digital Arts and New Media | University of California, Santa Cruz (2019 - 2021)
MS Computational Media | University of California, Santa Cruz (2017 - 2019)
BS Computer Science: Game Design | University of California, Santa Cruz (2012 - 2016)

OTHER ACCOMPLISHMENTS AND INTERESTS

During my time as a doctoral researcher I have managed and been a team member on multiple research projects, both large and small scale. I directed and managed a team of four writers and was responsible for the completion of seven individual episodes, all delivered on time within the span of three months. I have led multiple game projects with varying numbers of collaborators and am used to providing direction and offering flexibility in how tasks are completed while maintaining a coherent high level vision of each project. My most recent job as an AI engineer has been a collaboration with the Honda Research Institute and Northwestern University, requiring a large amount of coordination across teams and different engineering disciplines as well as independence to pursue developing new features and capabilities for software deliverables.

Beyond my time as a system designer and engineer, I am an avid theatergoer who has also worked on four theater productions, two as a playwright and two as a lighting designer. My time as a playwright in particular has made me take joy in the creativity that comes with collaboration and seeing what colleagues with expertise different from my own will add to my work.

I grew up reading science fiction and playing space combat games like *FreeSpace 2* and sci-fi shooters like *Halo*, even practicing mission and level design in both games' included editors. Examples from my *Halo* map making days can be found on my website linked above. By the end of my time making maps for *Halo* I'd begun to take on personal challenges, such as using parts of the canvas map which were rarely used by other modders, to explore the limitations of the available tools. My last challenge to myself was to make an entire map from scratch in the tool where my initial plans had to be dramatically altered to accomodate the tool's preferences for blocky geometry. All my time making missions and maps taught me the importance of working with the limitations of software rather than fighting them, and these lessons have carried into my work on *Tracks in Snow* and Puppitor.