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# Mercedes Sandu

## Software Engineer

Portfolio: [mercedessandu.com](https://mercedessandu.com)  
[github.com/mercedes-sandu](https://github.com/mercedes-sandu)  
[linkedin.com/in/mercedes-sandu](https://linkedin.com/in/mercedes-sandu)

Creative and motivated software, web, and game developer seeking to apply knowledge from startup experience toward a dynamic and detail-oriented frontend or full-stack position.

### EDUCATION

<b>Master of Science</b> , Northwestern University <i>Computer Science, Thesis Track, GPA 4.0</i>	March 2022 — June 2024
<b>Bachelor of Arts</b> , Northwestern University <i>Mathematics and Computer Science Double Major, Chemistry Minor, GPA 3.86</i>	September 2020 — June 2024
<b>High School Diploma</b> Niles North High School <i>GPA 4.75</i>	August 2016 — May 2020

### SKILLS

<b>Tools and Languages</b>	C#, Unity, Java, Python, HTML, CSS, TypeScript, React, Figma, $\text{\LaTeX}$ , Blender, Git, Discord API, Jira
<b>Quantitative Research</b>	Proof Writing, Discrete Geometry, Artificial Intelligence, Logic, Mathematica, MatLab
<b>Communication</b>	English, Romanian, Spanish

### TECHNICAL EXPERIENCE

<b>FRONTEND DEVELOPMENT IT INTERN / KNOWme</b> <i>Abbott</i>	<b>June 2023 — Present</b> <i>Chicago, Illinois</i>
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- Designed and implemented components for React webapp using TypeScript, HTML, and CSS
- Updated webapp components to be accessible with AA-standard colors, tabbed navigation focus states, and accessibility labels
- Completed tasks in an agile sprint-based workflow
- Redesigned and implemented PowerBI dashboards and PowerApps using Figma for intern showcase project

<b>LEAD FRONTEND ENGINEER / INTERVALLIC, SONGLYBOT</b> <i>Overture Games</i>	<b>June 2022 — Present</b> <i>Chicago, Illinois</i>
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- Engineered and implemented primary game mechanics, including player movement, level progression, and accuracy detection using Unity and C#
- Delegated relevant tasks to team members (development and art teams) with differentiated experience and roles
- Developed systems for Midi instrument, computer keyboard, and touchscreen input
- Built data structures to represent musical concepts such as key signatures, intervals, chromatic movement, and scales
- Led, designed, and programmed major UI/UX projects for visual aesthetic and frontend development of Intervall game

<b>GRADUATE RESEARCHER / ARTIFICIAL INTELLIGENCE &amp; NARRATIVE RESEARCH</b> <i>Northwestern University Computer Science Department</i>	<b>March 2022 — Present</b> <i>Evanston, Illinois</i>
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- Studied and documented the uses of propositional and formal logic in generative software and game artificial intelligence
- Analyzed Dr. Ian Horswill's experimental generative language, Imaginarium, with the intent to expand its logical implications
- Experimented with Imaginarium project and extended Imaginarium codebase to discover its technical and logical shortcomings and planned improvements
- Designed, implemented, and tested a constraint-based SAT solver for constraints imposed on randomly generated graphs

<b>UNDERGRADUATE RESEARCHER / DISCRETE GEOMETRY RESEARCH</b> <i>Northwestern University Mathematics Department</i>	<b>January 2021 — June 2023</b> <i>Evanston, Illinois</i>
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- Studied the previous work of Dr. Shuyi Weng and Dr. Laura DeMarco on the folding of two-dimensional polygons into three-dimensional shapes
- Conducted case studies on different shapes and used findings and implemented code to write formal proofs
- Wrote a formal mathematics academic paper discussing main findings of research on polygons and three-dimensional shapes and published in *Involve Journal*
- Presented research findings to hundreds of educated enthusiasts

### AWARDS, PRESENTATIONS, & PUBLICATIONS

<i>Closed cap condition under the cap construction algorithm</i> , Involve Journal	June 2023
Joint Mathematics Meetings Undergraduate Oral Presentation	January 2023
Financial Award for The Garage Jumpstart Competition Finalist	August 2022
Summer Undergraduate Research Grant	Summer 2022
Undergraduate Research Exposition and Northwestern Undergraduate Mathematical Society Presentations	May 2021