

# Nick Kisel

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[nkisel@berkeley.edu](mailto:nkisel@berkeley.edu)   (916) 412 3045   [github.com/nkisel](https://github.com/nkisel)   [linkedin.com/in/nkisel](https://linkedin.com/in/nkisel)

Second-year UC Berkeley CS student, tutor, and media producer prepared to build large projects & effective communication skills from an internship on an industry standard software development team.

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## Skills

Languages: Python (advanced), Java (advanced), C (proficient), Scheme, HTML, CSS, JavaScript, SQL  
Experience using Git, Unix commands, writing unit & integration tests, using debuggers.

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## Education

**University of California, Berkeley** (GPA: 3.67)

August 2018 - Present

BA, Computer Science (In Progress)

Expected Graduation: Spring 2022

### Relevant Coursework

Structure & Interpretation of Computer Programs

Discrete Mathematics and Probability Theory

Designing Information Devices and Systems I & II

In Progress:

Data Structures

Machine Structures

Principles & Techniques of Data Science

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## Projects

(see samples at [github.com/nkisel/Samples](https://github.com/nkisel/Samples))

### Gitlet

(Java)   [github.com/nkisel/Samples](https://github.com/nkisel/Samples)

- Add, remove, commit, push, fetch, and pull different versions of files just like with Git.
- Files are uniquely identified by SHA-1 hashing and serialized in a hidden directory.

### Tablut

(Java, HTML)   [github.com/nkisel/Samples](https://github.com/nkisel/Samples)

- Norse attack-and-defense board game, complete with AI for solo play & GUI for two-player games.
- AI follows the minimax algorithm with alpha-beta pruning for fast & intelligent decision-making.

### Mandelbrot Fractal Viewer

(C)   [github.com/61c-student/fa19-proj1-nkisel](https://github.com/61c-student/fa19-proj1-nkisel)

- Generates a video of a linear zoom between two magnifications of the Mandelbrot set.
- Calculates the number of Mandelbrot iterations for a grid of points and maps each point to a color.
- Customizable to arbitrary resolution, video length, color, and zoom level.

### Enigma Machine

(Java)   [github.com/nkisel/sgnpst](https://github.com/nkisel/sgnpst)

- Expands the capabilities of the World War II era message encryption device with a rotating cipher.
- Sets up a machine with any alphabet, any number and order of user-defined rotors, and (en/de)codes!

### Scheme Interpreter

(Python, Scheme)   [github.com/nkisel/61A/tree/master/scheme](https://github.com/nkisel/61A/tree/master/scheme)

- Python application that directly mimics Scheme specification and behavior
- Converts syntax such as operators and special forms into tokens, representing them as Python objects
- Implemented tail-call optimization, improving memory use and recursion capabilities

### Ants

(Python)   [github.com/nkisel/61A/tree/master/ants](https://github.com/nkisel/61A/tree/master/ants)

- Browser-compatible iteration of hit strategy game "Plants vs. Zombies"
- Objects & inheritance distinguish ants of similar characteristics with minimal repetition.

### Audio Recording and Analysis

(Python)   [github.com/nkisel/loudness-extractor](https://github.com/nkisel/loudness-extractor)

- Python application capable of recording & analyzing audio to determine average amplitude.
  - Implemented menus, input sanitization, and file I/O to promote highly customizable output.
  - Extensions include volume auto-ducking, automated music selection, video clip capture.
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## Interests

**Videos:** filming, editing, graphic design, branding for documentaries & interviews hosted online.

Adobe Photoshop, Illustrator, Premiere, After Effects; Sony Vegas; Audacity; Blender

**Music:** Composition and production of electronic, rock, hip-hop soundtracks.

FL Studio & Ableton Live, familiarity with recording techniques, equipment, and formats.