# Pedraam Nikzad

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## Education

**University of California, Berkeley**,                                              **Fall 2022**
*Bachelor of Arts, Computer Science and Integrative Biology*
- GPA: 3.76

**Relevant Coursework: CS61BL: Data Structures**, **CS170: Efficient Algorithms and Intractable Problems**, CS61C: Machine Structures, CS61A: Structure and Interpretation of Computer Programs, CS70: Discrete Mathematics and Probability Theory, Math 54: Linear Algebra and Differential Equations

## Skills

**Languages:** Proficient in Python and Java, Experienced in JavaScript, HTML/CSS, C, and C++
**Frameworks:** React and Pandas
**Software/Tools:** Git, Visual Studio Code, IntelliJ, and LaTeX

## Projects

**Random World Generator**, Java                                              **Summer 2021**
- Used a numerical seed to pseudo-randomly generate a world that must meet specific parameters.
- Gamified each world to have multiple win-loss conditions.
- Created an enemy AI that uses the **A\* algorithm** to find nearest item.
- Programmed animated controllable actions that give a different on-screen text responses based on outcome.
- Utilized **Java** and Princeton's Standard Draw library.

**Gitlet**, Java                                              **Summer 2021**
- Created a version control system that supports most of Git's functionality. Including support for add, rm, commit, find, log, branch, reset, merge, and more.
- Utilized **Java** serialization and hashing to store files as blobs in order to minimize memory usage.
- Implemented **Dijkstra's algorithm** for efficient search and commit tracking.
- Used UC Berkeley's Runner.py for unit testing.

**Pedraam.org**, JavaScript(React), HTML/CSS                                              **Summer 2021**
- Created a portfolio website for myself in order to show off my projects as well as teach myself the React framework.
- Utilized the **React Spring** library for smooth animations and real physics.
- Used **Styled Components** for CSS in order to maintain scalability with React components.

**Chess with Minimax AI**, Python                                              **Spring 2021**
- Built fully-functioning chess game in **Python** that obeys all the classical rules of chess.
- Implemented an AI that uses the Minimax algorith with alpha-beta pruning to find optimal move.
- Used **PyGame** library for all rendering purposes.

## Experience

**Akhurst Lab at UCSF Medical Center**, San Francisco, CA                                              **Summer 2020**
*Research Assistant*                    **Post-doc:** Eswari Dodagatta-Marri, eswari.dodagatta@ucsf.edu
- Performed hands-on molecular biology assays, including Western Blots, protein purification, and PCR.
- Created database for 1078 cell lines using **Pandas** to sort and transform data sourced from legacy excel files.
- Created new workflow for storing highly-sensitive cell line samples at -80° C using **Pandas** to store storage data. Implemented **loc functions** in Pandas backend for faster pulling based on specified criteria.
- Mice handling; responsible for injections and tumor dimensional measurements. Created data objects for each individual mouse in **Pandas**.