

# Arth Shukla

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## EDUCATION

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### University of California, San Diego

September 2021 – June 2025

*Bachelor of Science in Mathematics-Computer Science*

GPA – 4.0

### Sequoia High School

August 2017 – June 2021

*IB Diploma Recipient, Honor Roll, Track & Field, Cross Country, Model UN, Debate Team*

GPA – 4.6

### Relevant Coursework

*Completed:* Design and Analysis of Algorithms, Advanced Data Structures, Optimizations for Data Science I and II, Computer Organization and Systems Programming, Data Structures and Object-Oriented Design, Computer Science and Object-Oriented Programming - Java, Networks and Digital Communications, Data Warehousing to Big Data, Statistical Methods and Probability, Enumerative Combinatorics, Abstract Algebra I and II, Linear Algebra, Multivariable Calculus, Vector Calculus, Differential Equations  
*Ongoing in Spring 2023:* Supervised Machine Learning, Theory of Computation, Intro to Computational Statistics, Synthesis 100

## EXPERIENCE

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### Bittner Development Group

Bittner Development Group is an education technology company which creates interactives and products for clients like Norton, Barnes and Noble, SparkNotes, Thames and Hudson, and more.

**Technologies Used:** Web Development: React, SCSS, Node.js; DevOps: GitLab, Git, WSL; Scripting and Automation: TypeScript, JavaScript, Java; Development Standards: Web Content Accessibility Guidelines (WCAG) 2.1 AAA, Aria Authoring Practices Guide (APG), Norton Design System; Processes: Agile Methodology

### Software Engineering Intern

January 2021 – Present

- Develop component library and enterprise web application 'Interactive Builder' using React and SCSS
- Manage DevOps and CI/CD pipeline using GitLab
- Web development, QA, and devops of over 10 education interactive projects in React
- Manage and train two interns to complete projects using React and SCSS, GitLab, Git, and WSL
- Code projects in compliance of web content accessibility with WCAG
- Propose, lead, and develop internal and for-client automation projects using Node and native JavaScript

### Media Group Intern

November 2019 – January 2021

- Independent project involving automation of over 10 spreadsheet and data entry tasks using Java improving efficiency by over 90%
- Code questions into over 15 textbooks on Norton's online textbook platform, PCAT, using HTML

### ACM AI's Element.AI Competition

I led development and organization of Element.AI, an \$8000 competition at UCSD with 200 participants.

**Technologies Used:** Element.AI: Python, Conda, Java, Maven, OpenAI Gym, PettingZoo, PyGame, Jackson, Squid, Bash

### Lead Developer

July 2022 – Feb 2023

- GitHub (open to public): <https://github.com/acmucsd/Element.AI>
- Use Python with Conda and PettingZoo ParallelEnv to create multi-agent gym environment as the core competition environment
- Use Java with Maven and Jackson to create Java sdk for 45 participants (~22.5% of all participants)
- In coordination with UCSD ITS, use Squid proxy, IPTables and bash scripts to create instructor tools, allowing us to enable/revoke access to wifi, whitelist sites, enable/revoke access to files, and in general control the competition accounts with granularity, both targeted and en masse
- Write proposals and attend meetings to obtain \$8000 in sponsorships, attracting 200 participants (limited primarily by the number of UCSD linux lab machines) with hundreds of submissions

### Personal Web Development Projects: <https://github.com/arth-shukla>

**Technologies Used:** Web Development: TypeScript, React, Rollup, Jest, Webpack, Storybook, SCSS; DevOps: Netlify, Git, GitHub Pages, GitHub Packages; Development Standards: Web Content Accessibility Guidelines (WCAG) 2.1 AAA, Aria Authoring Practices Guide (APG)

### Independent Developer

January 2022 – Present

- Create personal website using React Typescript, SCSS, and Material UI, accessible by WCAG 2.1 AA standard, and publish to

custom domain using Netlify: <https://arth.website>

- Code mobile-compatible Dice Roller web app with React and SCSS, accessible by WCAG 2.1 AA standards and publish to GitHub Pages: <https://arth-shukla.github.io/dice-roller>
- Create Icon Library with React TypeScript and SCSS, publish to GitHub packages: <https://github.com/arth-shukla/my-icons>; code demos and documentation published on GitHub Pages: <https://arth-shukla.github.io/my-icons-documentation> submissions

## ACM AI UCSD

ACM AI is UCSD's largest AI student org which fosters a community for those interested in AI and research.

**Technologies Used:** AI/ML Workshops and Projects: Python, PyTorch, TensorFlow, Google Colab; Web Development: TypeScript, React, LESS

### Board – Director of Operations

May 2022 – Present

- Lead team of 7 event leads in creation of competitions, workshops, and socials related to ML/AI
- Coordinate with marketing and development teams to market events and create competitions

### Board – Developer

April 2022 – Present

- Front-end website and AI competition development using React and TypeScript and LESS for ACM AI
- Develop component library, create and alter pages, and manage issues/pull requests on GitHub

### Board – Event Lead

January 2022 – May 2022

- Ideate, create, and host workshops on NLP, deep learning, and ML topics
- Develop and organize competitions run by ACM AI (100-200 submissions on average)
- Coordinate with different parts of ACM AI Board (marketing, social, and other event leads) to host workshops and social events
- Mentor intermediate and beginner ACM Projects teams in developing AI/ML projects
- Promote Diversity, Equity, and Inclusion by planning URM-focuses events, implementing inclusive Discord server management, and working to make AI more accessible

### Machine Learning Engineer

September 2021 – January 2022

- Create model to convert human faces to Cat-Human hybrid using DCGAN, PatchGAN, CycleGAN, and StyleGAN
- Coordinate with team of 3 front- and back-end devs to implement model into user-friendly tool

## Design Co UCSD

Design Co is UCSD's largest design org with many events, each with a custom-made website for marketing.

**Technologies Used:** Web Development: TypeScript, React, Rollup, Jest, Webpack, Storybook, SCSS; DevOps: Netlify, Git, GitHub Pages, GitHub Packages; Development Standards: Web Content Accessibility Guidelines (WCAG) 2.1 AAA, Aria Authoring Practices Guide (APG)

### Board – Web Developer

March 2023 – Present

- Use Rollup and Typescript to create React component library with testing through Jest and documentation through Storybook, currently used in one website
- Use React and SCSS to create Design Co Visual Design Academy (VDA) website: <https://vda2023.ucsddesign.co/>

## SKILLS

- **Programming Languages** – TypeScript, JavaScript, Node, React, Java, Python, Ruby, Bash, SCSS, LESS, HTML5 and CSS3, C, C++, R
- **Packages and Libraries** – Rollup, Jest, Webpack, Storybook, PettingZoo, PyGame, Arcade, Jackson, Squid
- **Development Standards** – Open AI Gym, PettingZoo AEC Environment and Parallel Environment, Web Content Accessibility Guidelines (WCAG) 2.1 AAA, Aria Authoring Practices Guide (APG)
- **Programs and Software** – Netlify, Git, GitHub, GitLab, Conda, Maven, Visual Studio Code, Conda, Maven, WSL, Storybook, Android Studio, Matlab, Microsoft Office, Microsoft Excel, Microsoft Powerpoint
- **Languages** – Fluent in English and French, Spoken Hindi