Jacob Valdez

+1-469-968-9490 | jacob@humanrobots.ai | jvboid.dev

in jacob-f-valdez | ⬡ JacobFV | 🐦 @jvboid

📍 Anywhere (currently Midlothian TX, USA)

OBJECTIVE

Seeking a challenging role in software engineering or AI research to leverage my diverse technical skills and entrepreneurial experience in developing innovative solutions. Passionate about pushing the boundaries of technology, particularly in robotics and AI, to create impactful products that improve people's lives.

EXPERIENCE

- **UTA College of Social Work** *June 2024 - Present*
  Developer (IC) Arlington, TX
  ◦ Helped interns complete MyAmble: a full stack PWA for social work surveys with real-time LLM-driven analyses

- **Flora Creative Systems [🌐]** *June 2024*
  Full-Stack Pipeline Engineer (IC) Remote
  ◦ Worked alongside team of 10 other software engineers to build a node-based AI media editor

  ◦ Implemented node editor drawing integration and user credit tracking refinement

- **Independent Research & Development** *Jan 2023 - May 2024*
  Human Robot: Self-Directed Project Midlothian, TX
  ◦ Worked on Human Robot: a $1,000 general-purpose humanoid robot prototype with full-scale articulation (not yet finished)

  ◦ Engineered innovative low-pressure hydraulic systems, achieving 10x+ cost reduction in valves, actuators, and prime movers (see progress updates: ▶)

  ◦ Designed for scalable manufacturing using welded plastic, CNC routed MDF, plasma cut sheet metal, and custom PCBs

  ◦ Conducted research in neurosymbolic AI, focusing on advanced control architectures for humanoid robots [⬡]

  ◦ Pitched project to investors, including Z Fellows (top 10% applicant); received $10k seed funding from aunt Debra Morgan [🐦]

  ◦ Developed comprehensive business plan targeting $1000 price point with $100/mo AI subscription

  ◦ Gained valuable experience in mechanical, robotics, and AI engineering as well as startup basics

- **Motio Inc [🌐]** *June 2022 - Jan 2023*
  Software Engineer Remote
  ◦ Developed Soterre for Qlik Sense

  ◦ Intern June - Aug. Full-time SE Aug. '22 - Jan '23

- **IT Lab, UTA [🌐]** *June 2021 - May 2022*
  Student Research Assistant Arlington, TX
  ◦ Collaborated with a research group to evolve and test a flask-based statistical visualization tool CoWiz (renamed as Dash)

  ◦ Developed full-stack web server MLN-Dashboard using the Next-React-GraphQL-Strapi stack

- **UTA College of Social Work** *June 2021 - May 2022*
  Student Research Assistant Arlington, TX
  ◦ Maintained and enhanced multi-platform (iOS and Android) data collecting application MyAmble and web admin dashboard

  ◦ Stack: JavaScript, Firebase, Flutter (mobile), and Vue (admin dash)

- **McDonald's** *May 2016 - Mar 2020*
  Crew Trainer Midlothian, TX
  ◦ Led safety committee and addressed employees during 30-minute monthly safety meetings

  ◦ Trained employees on-the-job and formally

  ◦ In addition to 4 years of formal education, actively used Spanish on-the-job

EDUCATION

- **The University of Texas at Arlington** *June 2020 - Aug 2022*
  B.S. Computer Science Arlington, TX
  ◦ GPA: 3.6/4.0

- **Navarro College** *Sept 2014 - May 2018*
  A.A.S. in Mathematics Waxahachie, TX
  ◦ GPA: 3.9/4.0

  ◦ Dual-credit program; 85 hours completed while in high school

PROJECTS

- **Human Robot: $1,000 general-purpose humanoid robot** *Feb 2019 - Present*
  Technologies: 3D Printing, CNC routing, plasma cutting, PCB fab, hydraulics, and mechatronics, embedded systems, and AI [○] [⊕] [▶]
  ◦ Developed a full-scale humanoid robot prototype with 2 legs, 2 arms, 5 fingers per hand, supporting all major body articulations. Integrated 3MP & 12MP dual cameras, stereo mics, stereo speakers, and various sensors including acceleration, angular acceleration, magnetic and temperature sensors

  ◦ Designed for fast, scalable manufacturing using mostly welded plastic, CNC routed MDF, plasma cut sheet metal, and off-the-shelf components. Engineered custom PCBs and injection molded parts to minimize costs and optimize performance

  ◦ Achieved 10x+ cost reduction in low pressure hydraulic valve, actuator, and prime mover fabrication through innovative design and material choices

  ◦ Pitched innovative robotics technology to investors including Z Fellows, Inception Studio, Schematic Ventures, VibeCap, StarshipVC, Y Combinator, and 1517 Fund. Received $10k seed funding from Debra Morgan (family)

  ◦ Developed a comprehensive business plan targeting a $1000 price point with $100/mo AI subscription with the objective of selling 1M+ robots by the end of 2024 and leading a revolutionary generation of automation

  ◦ Initially aimed to build and launch fully bootstrapped in 2024, but later shifted to pitching for pre-seed funding, and now focusing on a regular career

- **MLN-Dashboard: Modular server for data visualization** *Oct 2021 - May 2022*
  Stack: typescript, react, next.js, GraphQL, Prisma, and later Strapi [○] [▶]
  ◦ Began work on a full-stack Next.js web server for complex data visualization and analysis

  ◦ Implemented modular architecture allowing easy integration of new data sources and visualization types

  ◦ Utilized GraphQL for efficient data querying and Prisma for robust database management

  ◦ Later began integrating Strapi CMS for improved content management and user interface customization

- **20Q: 20 Questions Android Game** *June - Aug 2021*
  Stack: Android, SQLite, Java, Kotlin [○] [⊕]
  ◦ Collaborated in a 4-person team to develop an Android app for the classic 20 Questions game

  ◦ Contributed to design, development, and testing phases of the project

  ◦ Implemented game logic where users answer yes/no questions sequentially

  ◦ Developed algorithm for app to guess user's thought based on responses

  ◦ Created user interface for seamless gameplay experience

  ◦ Utilized Java and Kotlin programming languages for Android development

  ◦ Presented project results at the end of the semester, showcasing teamwork and technical skills

- **DesparadosAEye: An Android 'chatGPT' 18 months before the release of chatGPT** *Jan - May 2021*
  Stack: Android, SQLite, Java, Kotlin, TFLite, BlenderBot [○] [⊕]
  ◦ Led a 5-person team as project manager, general app developer, and ML engineer

  ◦ Organized team, designed general app architecture, and managed MLOps

  ◦ Implemented on-device conversational AI using Facebook's BlenderBot-small, compiled to TFLite format

  ◦ Overcame challenges in deploying a 335-million parameter neural network to Android devices

  ◦ Developed one of the first applications to use BlenderBot for on-device mobile chatting

  ◦ Completed the project within a tight deadline, finishing 1 hour before submission

- **CookieCutter CNC: 2x2 Plasma Cutter** *May 2021 - Jun 2021*
  Technologies: C#, Arduino, Mechanical Engineering, Electrical Engineering [▶] [M] [○] [○]
  ◦ Designed and built a 2x2 plasma cutter CNC machine to automate sheet metal cutting process

  ◦ Developed Windows software in C# to process SVG files and generate optimized path coordination code

  ◦ Created Arduino firmware to interpret commands and control machine movements

  ◦ Implemented serial communication between Windows software and Arduino for real-time control

  ◦ Presented a 5-part video series showcasing the project́s motivation, functionality, and industry relevance

PAPERS

[P.1] Chengkai Li, Nan Li, Md Kamruzzaman Sarker, Jacob F. Valdez, Dhrubajyoti Ghosh, Jia-Huai You. (2022). **ModViz: A Modular and Extensible Architecture for Drill-Down and Visualization of Complex Data**. Baltic DB&IS 2022 Conference.

[P.2] Jacob F. Valdez. (2022). **Computatrum Project Spec**.

[P.3] Jacob F. Valdez. (2022). **Limboid LLC Business Plan**.

[P.4] Jacob F. Valdez. (2022). **Real Engineering**.

[P.5] Jacob F. Valdez. (2021). **Relative Generality — Clarifying the Evolution of Artificial Intelligence**.

[P.6] Jacob F. Valdez. (2021). **Using Artificial Intelligence to Solve the Problem**.

[P.8] Jacob F. Valdez. (2021). **Complexity, Autonomy, Criticality, ... but Safety?**.

[P.9] Jacob F. Valdez. (2021). **Reaching for the intangible**.

[P.10] Jacob F. Valdez. (2017). **A HyperSystem of Things**.

[P.11] Jacob F. Valdez. (2017). **A Pragmatic Approach to Sustained Flexible Manufacturing**.

[P.12] Jacob F. Valdez. (2017). **HyperSystem Project Proposal**.

[P.13] Jacob F. Valdez. (2017). **A Mathematical Approach Examining Characteristics Affecting Enzyme Peroxidase Activity**.

SKILLS

- **Programming Languages:** Python, JavaScript, TypeScript, Java, C#, Kotlin, VB6
- **Web Technologies:** React, Next.js, GraphQL, Node.js, Vue.js, Flask
- **Database Systems:** PostgreSQL, SQLite, Firebase
- **Data Science & Machine Learning:** TensorFlow, Keras, PyTorch, BERT
- **Cloud Technologies:** AWS, Firebase, Google Cloud Platform
- **DevOps & Version Control:** Git, GitHub, Docker/Compose
- **Other Tools & Technologies:** Android Development, Flutter, Blender, 3D Printing, CNC routing, PCB fabrication

CERTIFICATIONS

- **AWS Certified Machine Learning - Specialty** — *Feb 2022*
- **Certifying Body:** TensorFlow Developer Certificate — *Apr 2021*
- **Certifying Body:** DeepLearning.AI TensorFlow Developer Specialization — *Oct 2020*
- **AWS Certified Developer - Associate** — *Mar 2019*
- **AWS Certified SysOps Administrator - Associate** — *Mar 2019*
- **AWS Certified Solutions Architect - Associate** — *Mar 2019*

HONORS AND AWARDS

- **Top 10% Applicant - Z Fellows Program** — *Spring 2024*
  Z Fellows [⊕]
  ◦ Selected as a top 10% applicant for the Z Fellows program
  ◦ Pitched Human Robot Inc (formerly Limboid) project

- **2022 Future Texas Business Legend Award Finalist** — *Feb 2022*
  Texas Business Hall of Fame [⊕]
  ◦ Recognized for submitting Limboid LLC business proposal

- **Co-Author on Paper Accepted to Baltic DB&IS 2022 Conference** — *Apr 2022*
  Baltic DB&IS 2022 [⊕]
  ◦ Co-authored "ModViz: A Modular and Extensible Architecture for Drill-Down and Visualization of Complex Data"

- **Broaden and Build Conference Honorable Mention** — *Sept 2021*
  UTA College of Social Work [⊕]
  ◦ Presented work "Broadening and Building Beyond Classical Reinforcement Learning"

- **SCRF Honorable Mention + $100 award** — *Apr 2021*
  UTA CSE Dept [⊕]
  ◦ Presented work "Predictive General Intelligence"

- **20% Project Presentation Honorable Mention** — *May 2013*
  FSMS [⊕]
  ◦ Built and presented the CookieBaker 3D Printer with my twin brother Isaac to a 100-person audience

LEADERSHIP EXPERIENCE

• **Crew Trainer and Safety Committee Organizer** *Jul 2018 - Mar 2020*
McDonald's [🌐]
  ◦ Served as a Crew Trainer, responsible for training and mentoring new employees both on-the-job and through formal sessions
  ◦ Led Safety Committee and addressed employees during 30-minute monthly safety meetings for both English and Spanish-speaking groups
  ◦ Ensured compliance with safety protocols and procedures across all restaurant operations
  ◦ Fostered a culture of safety awareness and continuous improvement among staff
  ◦ Actively used Spanish on-the-job, complementing 4 years of formal education in the language
  ◦ Left position in March 2020 due to the COVID-19 pandemic

• **Biology Lab Group Leader** *Sept 2017 - Dec 2017*
General Biology I DC, Senior Year at WGHS [🌐]
  ◦ Initiated and organized a biology lab group to streamline activities for a new teacher
  ◦ Authored and implemented a group contract outlining safety, task management, and communication protocols
  ◦ Led the Coordinator's Committee, overseeing group instruction, appointing leads, and managing progress schedules
  ◦ Organized file-sharing systems, resolved conflicts, and evaluated group leads monthly
  ◦ Maintained high academic standards, requiring committee members to maintain a B+ or higher in both lab and lecture

VOLUNTEER EXPERIENCE

• **Founder and Operator** *2024 - Present*
GoHuman Fund [🌐]
  ◦ Founded and currently operate a global micro-seed fund investing/granting in innovative projects across various fields including AI, blockchain, hardware, SaaS, and health tech
  ◦ Deployed $1,100 of personal funds to support promising entrepreneurs and prodigies worldwide
  ◦ Manage quarterly capital deployments (typically $100 initial investments) to foster early-stage R&D
  ◦ Provide mentorship, networking opportunities, and emotional support to fund recipients
  ◦ Expanded fund's reach to include recipients from diverse locations including India, South Africa, and America
  ◦ Awarded grants to five _buildspace s5 participants, supporting projects like Vibhuti's Sodium BMS research, Leapflow, and Zip Notary
  ◦ Also mentored (2-5 hrs/wk Q1&Q2 2024) and financed ($600) 16-year-old prodigy Pablo Cobo Perez' ML and robotics research, culminating in his criminal detection system
  ◦ GoHuman Fund is looking for more volunteers to help us expand our operations: hello@gohuman.fund

ADDITIONAL INFORMATION

Languages: English (Native), Spanish (Conversational)
Interests: Neurosymbolic AI, Humanoid Robotics, Entreprenurship/Investing, Full-Stack Development, 3D Printing, CNC Machining, Neuroscience and Deep Learning Theory, X Posting

REFERENCES

Weber Wong [in] [🐦]
Founder/CEO
Flora Creative Systems
weber@florafauna.ai
Relationship: CEO

Deok Gun Park [in]
Research Scientist
Stanford University
intuinno@gmail.com
+1-765-426-7448
Relationship: Undergrad research advisor

Debra Henderson Morgan [in]
Managing Director
CohnReznick LLP
debra.morgan@cohnreznick.com
+1-972-467-8959
Relationship: Aunt, Investor

Mark Summersett [in]
Branch Supervisor (retired)
PGW Autoglass
mark@summersett.us
+1-972-809-8520
Relationship: Friend/life mentor