# JACOB VALDEZ

## ML Engineer, Developer, Entrepreneur

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⌨ JacobFV   in jacob-f-valdez

# EMPLOYMENT

## Founder
### Limboid LLC
📅 Oct 2019 – Present        🔗 limboid.ai

- Developing artificial general intelligence 🧠 and humanoid robots 🤖!
- Taken on roles: ML R&D, mechatronics, and robotics engineering, PCB designer, cloud and web dev, other programming, system architecting, supply-chain optimization, logistics, supplier negotiation, accounting, and the typical entrepreneur stuff
- We're almost ready for production!

## Software Engineering Intern
### Motio Inc
📅 June 2022 – Present       🔗 motio.com

- Develop Soterre for Qlik Sense
- Will start full-time this August

## Student Research Assistant
### IT Lab, UTA
📅 June 2021 – May 2022      🔗 itlab.uta.edu

- Collaborated with research group to evolve and test a flask-based statistical visualization tool CoWiz
- Developed full stack web server MLN-Dashboard using Next-React-GraphQL-Strapi stack

## Student Research Assistant
### UTA College of Social Work
📅 June 2021 – May 2022      📍 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)

## Crew Trainer
### McDonald's
📅 May 2016 – Mar 2020       📍 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

## B.S. Computer Science
### The University of Texas at Arlington
📅 June 2020 – Present       📍 Arlington TX
GPA 3.7/4.0; graduate Aug 2022

## A.A.S. in Mathematics
### Navarro College
📅 Sept 2014 – May 2018      📍 Waxahachie TX
GPA 3.9/4.0; Dual-credit program; 85 hours taken

# ACHIEVEMENTS

2022 Future Texas Business Legend Award Finalist
**Texas Business Hall of Fame**  📅 Spring 2022
for Limboid LLC business proposal

Paper accepted
**Baltic DB&IS 2022**  📅 Spring 2022
for co-authoring *ModViz: A Modular and Extensible Architecture for Drill-Down and Visualization of Complex Data*

Broaden and Build Conference Honorable Mention
**UTA College of Social Work**  📅 Sept 2021
for presenting work *Broadening and Building Beyond Classical Reinforcement Learning*

SCRF Honorable Mention
**UTA CSE Dept**  📅 Spring 2021
for presenting work *Predictive General Intelligence*

20% Project Presentation Honorable Mention
**FSMS**  📅 May 2013
for presenting the CookieBaker 3D Printer to a 100-person audience

# CERTIFICATIONS

AWS Certified Machine Learning – Specialty
**AWS**   Feb 2022

Google TensorFlow Developer Certification
**Google Developers**  📅 April 2021

DeepLearning.AI TensorFlow Developer
**Coursera**  📅 Oct 2020

DeepLearning Specialization by DeepLearning.AI
**Coursera**  📅 Sept 2020

AWS Certified Developer – Associate
**AWS**  📅 Mar 2019

AWS Certified SysOps Administrator – Associate
**AWS**  📅 Mar 2019

AWS Certified Solutions Architect – Associate
**AWS**  📅 Feb 2019

AWS Certified Cloud Practitioner
**AWS**  📅 Nov 2018

# PROJECTS

## The Fertile Crescent
### Active project to cultivate and ecosystem human-level artificial intelligence

📅 Mar 2019 – Present      Limboid/the-fertile-crescent

- Computatrum: an AI agent that interacts with a computer using standard peripherals (keyboard, mouse, display, etc.)
  Limboid/computatrum    Limboid/computer-env
- The Multi-Agent Network (MAN): a modular developer-oriented framework for integrating pretrained and learning agents Limboid/man
- TensorCode: Python library for intelligent run-time code analysis and code-gen using deep learning Limboid/tensorcode
  Limboid/deep-tree
- Unsupervised: keras look-alike for modular unsupervised deep learning
  Limboid/unsupervised
- node-tree: generative design library for synthesizing animations, web content, and task-labeled environment interactions
  Limboid/node-tree
- and many more repo's

## Limboid
### Active project to develop humanoid robot

📅 Feb 2019 – Present      🔗 limboid.ai

- Design artifacts Limboid/limboid-robot
- Open company documents Limboid/limboid-llc
- More documentation Limboid/the-limboid-ecosystem

## MLN-Dashboard
### Modular server for data visualization

📅 Oct 2021 – May 2022      JacobFV/mln-dashboard

- Stack: typescript, react, next.js, GraphQL, Prisma, and later Strapi

## Jnumpy
### Another autograd/deep learning/RL library

📅 Oct – Nov 2021      JacobFV/jnumpy

## 20Q: 20 Questions Android Game
### Android app developer in a 4-person group

📅 June – Aug 2021      JacobFV/20Questions
                    🔗 jacobfv.github.io/projects/20Q

## multigraph-nn
### Dynamic time multi-graph neural network framework

📅 May 2021      JacobFV/multigraph-nn

- Stack: Python, tensorflow, keras

## DesparadosAEye
### Project manager, general app developer, and ML engineer for a 5-person group developing open-ended Android chatbot

📅 Jan – May 2021      kmosoti/DesparadosAEYE

# BIO

I was the nerd in primary school: learning VB6 in 5th grade and using it to make toy applications, moving to C# a year later for writing homework helpers through middle and high school, and (finally!) discovering the world outside Microsoft (HTML/CSS/JS, typescript, Python) beginning in high school. After graduating, I got active in a full time ministry while working part time. Later that year, I stumbled across `arxiv.org`, started reading, and fell into the 'let's create AI' black hole. I'm still there, and if I get to meet you, I hope to pull you in!

**Why are you into AI?**

Well let me clarify, the term 'AI' often just refers to the frontier of computer science R&D, but I mean AI in the original sense of the term: "the science and engineering of making intelligent machines", for example, developing a computer program that can control its own computer and reprogram itself to achieve a wide variety of tasks in various problem domains (that's actually my side project). I'm sure you can imagine many other exciting ways that "intelligent machines" would be useful.

**Can you relate a challenge you've overcome?**

Getting up after my DIY'ed Cookie Cutter CNC EDM head shorted out the lab in 9th grade in front of my entire class, teacher, and principal was probably the hardest challenge I've faced. I'd spent dozens of hours, written hundreds of lines of code, learned so many fundamental science and engineering concepts, and the reward was very discouraging. But I couldn't give up on engineering or even that project. The very next day, I presented on Cookie Cutter project and its present and planned features. Throughout the Summer, I quenched my newly ignited passion for calculus, differential equations, fluid dynamics, electricity, and material science with hundreds of textbook pages. And it is my resolve to continue moving forward as an engineer, regardless of the setbacks I experience.

**Where do you see yourself in 5 years?**

Honestly, I don't know! I try to take one day at a time so I can focus my energy. Currently, I hope to be deploying humanoid robots across the world by then, but whatever circumstances come, I will always strive to perform my very best.

## Stanford Open Datathon Group Project
### Data scientist in a 5-student international group
📅 Apr 2021   🔗 jacobfv.github.io/projects/2021_SODP

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## Home Internet Factory
### CNC router + 3D printer + Raspberry Pi 4 + camera + Internet
📅 Apr 2020   🔗 jacobfv123.medium.com/industrialautomation-home-bba924a3b2f0

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## Workplace Surveillance System
### Employee phone detection computer vision system
📅 July 2019   🔗 JacobFV/Workplace-Surveillance-System

- Stack: web 1.0, tensorflow.js, mobilenet
- Demonstration to employer succeeded identifying employees on their phone, but employer didn't end up purchasing a subscription

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## Big Blender Farm
### AWS Generative Blender Design System Concept
📅 July 2018 – Apr 2019

- Although never completed, became more familiar with Blender python scripting, general animation workflow, web application development, and the internet
- Planned extensively how to use Amazon Web Services (AWS) WAF, API-Endpoints, Lambda, static S3 buckets, CloudFront, and DynamoDB to deliver content and application on a completely serverless architecture

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## SQT-English-to-Spanish-Translator
### Flexible C# Spanish – English translation system
📅 Oct – Nov 2016   🔗 JacobFV/SQT-English-to-Spanish-Translator

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## Sale Translator
### Basic C# Spanish – English translation system
📅 Oct – Nov 2015   🔗 JacobFV/Sale

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## Cookie Cutter CNC
### Full stack engineering project
📅 Mar – May 2015   🔗 jacobfv123.medium.com/cookie-cutter-cnc-923c68932ee6

- 36"×36" sheet metal cutter with server and Arduino client control systems: 🔗 JacobFV/CookieControl   🔗 JacobFV/Arduino-CookieControl
- Designed and developed C# .svg parser, toolpath scheduler, and optimizer, Arduino controller with serial protocol and electronics, and CNC machine with electrodischarge machining head.
- Presented on project in May 2015 and June 2016

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## Copyright Calculator
### Scripted conversation bot to help students stay safe
📅 Sept 2014   🔗 JacobFV/Copyright-Calculator

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## CookieBaker 3D Printer
### Programmable 12×12 2D gantry
📅 Mar – May 2013   🔗 jacobfvaldez.weebly.com/engineering

- Learned mechanical engineering basics
- Intended to make a 3D printer, but extruder never added
- Re-attempted project in October 2014 with design modifications