

# JOSHUA SCHERTZ

*Techie, visionary, optimist.*

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## SKILLS

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**Programming:** Python (Expert), C++ (Beg), ROS

**Tech:** Linux (Debian - Adv), Git, Vim

**Data:** SQL (Adv), Postgres, machine learning (scikit)

**Design:** HTML, CSS, Fusion 360

## TECHNICAL PROJECTS

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### 5 DoF Robot Arm (ROS, Ubuntu, Arduino)

[joshschertz.com/projects/robotics](http://joshschertz.com/projects/robotics)

- Assembled 6 servo robot arm that uses ROS for control via Ubuntu to Arduino serial connection
- Designed a 3D CAD model (Fusion 360) of the arm that is used for ROS/Gazebo based simulations
- Building custom inverse kinematic software using the cyclic coordinate descent (CCD) method
- Changing the mechanical gripper to a pneumatic gripper based on either jamming or soft robotics
- Actively exploring the integration of Dex-Net 2.0 into the perception pipeline

### pySecMaster (Python – AGPLv3 Securities Master)

[github.com/camisatx/pySecMaster](https://github.com/camisatx/pySecMaster)

- Built automated database of interrelated finance data that stores data for +20,000 public companies
- Developed code to handle stock/option prices, corporate actions, economic events, and financials
- Efficiently utilized PostgreSQL to store +100GB of relational data on remote servers

### Sayv Bot (Python – Event driven trading system using neural net)

- Co-built trading system that used automated strategies to directly trade stocks and options with broker
- Implemented a strategy that used a Multi-layer Perceptron model to predict multi-day stock volatility which provided consistent 0.5% weekly return over 6 months (Jun '16 – Nov '16)

### System Administration

- Built physical systems: storage servers, multi-GPU systems (gaming, mining), HPC clusters (eBay parts)
- Maintain RAID arrays, multi-OS file sharing, network configuration (WiFi, LAN), and system backups

## EXPERIENCE

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### Freelance Programmer and Tech Consultant – San Antonio, TX

Jan 2017 – Present

- Helping dozens of individuals and small business solve technical issues

### Cofounder and Programmer – Sayv LLC – San Antonio, TX

July 2015 – Dec 2016

- Cofounded an algorithmic trading firm that generated a weekly return of 0.5% within the options market
- Co-built the trading system, along with the open sourced database system that feed it (pySecMaster)
- Managed all legal, record keeping, accounting and tax activities of the 4 person company

### Associate Corporate Economics Analyst – Valero Energy – San Antonio, TX

June 2013 – July 2015

- Processed and automated product forecasts and planned volume runs to derive company gross margin
- Helped maintain transfer pricing model to reflect market conditions (~40,000 codes at 25 refineries)
- Collaborated with traders and engineers from around the world to ensure forecasts were accurate

## EDUCATION

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The University of Texas at San Antonio

BBA Finance; BBA Accounting

Class of 2014

Graduated with Business Honors, Cum Laude – Cumulative GPA: 3.56

## SPEAKING ENGAGEMENTS

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- Building a Stock Trading System in Python (6 weekly classes) – UTSA Fall 2017
- Monthly Python Meetup Presentation (Tenacity library) – Austin, TX May 2017
- Intro to Python (8 weekly classes) – UTSA Fall 2016