# MARK HAVENS

Computer Scientist/Engineer

June 7, 2025

2806 W. Walnut Hill Ln.
Irving, TX 75038, USA

+1 972 704 9767

mrhavens

https://markhavens.us/

mark.havens@mavs.uta.edu

US Citizenship

## Social Networks ———

LinkedIn Profile

Github Project Page

Twitter Feed

Facebook Page

YouTube Channel

## Academic Overview –



# Current Positions

| Since 2020 | **CTO** | Start-up |
|---|---|---|

Ongoing development of SaaS control panel platform for general business automation and control.

| Since 2020 | **Technical Writer** | Start-up |
|---|---|---|

Writing long-form technical tutorials and articles on trending issues in containerization technology and DevOps.

| Since 2019 | **Embedded Systems Designer** | Start-up |
|---|---|---|

Developing prototype for wireless network enabled electronic business card.

| Since 2019 | **Principal & Virtual CTO** | Start-up |
|---|---|---|

A consultancy that also offers professional managed services specializing in DevOps centered engineering research, implementation, tool development, and executive management.

| Since 2019 | **Principal** | Start-up |
|---|---|---|

A Software as a Service (SaaS) company focused on developing AI-based APIs for web developers, graphics artists, game developers, illustrators, and virtually anyone else looking for low cost, original artwork and photography.

| Since 2010 | **Principal Founder & Leadership Advisor** | Dallas Makerspace |
|---|---|---|

Began what has become one of the largest and most successful makerspaces in the world. Served as founding director, de facto president, secretary and treasurer during the first year of operation. Recruited most of the founding members. Wrote the bylaws. Created most of the initial policy. Mentored most of the elected executive leadership after the first year.

# Education

## Graduate

| Since 2016 | **Ph.D. Computer Science** | UT Arlington |
|---|---|---|

Ongoing affective computing research focused on using data science and machine learning to computationally guess what other people are thinking and feeling by processing images of their faces and body language.

| 2009 – 2013 | **M.S. Management–Information Systems Security** | Colorado Technical University |
|---|---|---|

Received a supplementary Graduate Certificate in Project Management.

## Undergraduate

| 2002 – 2005 | **B.S. Computer Science** | UT Rio Grande Valley |
|---|---|---|

Final project involved source detection of IP packets across NAT devices to allow improved reporting accuracy of intrusion detection systems.

| 1994 – 1998 | **A.A.S. Computer Science Technology** | Texas State Technical College in Harlingen |
|---|---|---|

Courses included: MSDOS, UNIX, Advanced Basic, C, Advanced COBOL, Dbase, Assembler, HTML, Local Area Networking, Computer Maintenance, Program Maintenance & Conversion, and Project Design & Development.

# MARK HAVENS

Computer Scientist/Engineer

## About Me ─────────

I am a life-long innovator, entrepreneur, management consultant, and tech writer who has been classically trained as an academic research scientist. Awarded a Ph.D. fellowship in 2016, my research is focused on using data science and machine learning to decode the hidden emotions of the human face. Since 1995, I have founded a number of small tech startups—one of which has grown into a million dollar company. Today, I help other tech startups that intersect within my fields of interest. I especially love working with people who have not quite gotten things off the ground yet. In addition to management consulting, I conduct paid technical research in DevOps, Information Security, Machine Learning, IoT, and emerging industry trends.

## Leadership ─────────

| | | |
|---|---|---|
| 👥 | People Management | ● ● ● ● ○ |
| 🔺 | Project Management | ● ● ● ● ○ |
| 🌐 | Rmt. Team Mngmt. | ● ● ● ● ○ |
| ⊞ | Talent Management | ● ● ● ● ● |
| 🗄 | Virt. Team Mngmt. | ● ● ● ● ○ |
| 🏢 | Meeting Management | ● ● ● ● ○ |
| ⏭ | Agility | ● ● ● ● ● |
| 👥 | Coaching | ● ● ● ● ● |
| ❶ | Conflict Res. | ● ● ● ● ○ |
| 🌐 | Cultural Int. | ● ● ● ● ○ |
| 🔟 | Deal-Making | ● ● ● ● ● |
| ✂ | Decision-Making | ● ● ● ● ● |
| 🧭 | Delegation | ● ● ● ● ● |
| 🚚 | Facilitating | ● ● ● ● ● |
| 💬 | Clear Feedback | ● ● ● ● ○ |
| 💬 | Difficult Conv. | ● ● ● ● ● |
| ? | Mentoring | ● ● ● ● ● |
| 📈 | Strategic Planning | ● ● ● ● ● |
| 👥 | Supervising | ● ● ● ● ○ |
| 👥 | Team-Building | ● ● ● ● ○ |
| ↑ | Versatility | ● ● ● ● ● |
| 👁 | Authenticity | ● ● ● ● ● |
| 👥 | Encouraging | ● ● ● ● ○ |
| 🎁 | Generosity | ● ● ● ○ ○ |
| 👥 | Humility | ● ● ● ○ ○ |
| 💡 | Inspiring | ● ● ● ● ● |
| 👥 | Selflessness | ● ● ● ● ○ |

# Past Experience

## Entrepreneurship & Leadership

**2020** — **Community Leader** — *Online Group*
Created a 500+ member online community for coordinating PPE production. Efforts included logistical coordination of equipment, work-space, volunteers, and distribution during the onset of pandemic.

**2015 – 2016** — **Principal** — *Start-up*
A managed services provider for creating and maintaining content management systems for small companies.

**2011 – 2016** — **Principal** — *Start-up*
A SaaS company focused on Amazon Marketplace intelligent repricing automation. Created crude machine learning algorithms that was sold as a service to Amazon vendors in order to automate the repricing of their Amazon inventory.

**2008 – 2012** — **Principal** — *Start-up*
A reboot of an earlier company that used reverse engineering, bots, and machine learning to mine MMO game assets for distribution to internet retailers.

**2004 – 2006** — **Principal** — *Start-up*
First iteration of a new venture that pioneered the independent monetization of virtual economies in popular online games. Managed system that supported tracking system of online assets. Developed and maintained scripts to automate system functions and common administrative tasks. Responded to incidents to avoid system outages and restored availability in order to meet operation level objectives. Conducted performance tuning, implemented security, and conducted account administration. Designed, configured, and tested all network routers, switches, and firewall configurations.

**1995 – 1998** — **Partner** — *Start-up*
Competitive provider of business to business technical services that leveraged relationships with business leaders and key members of the economic development community of Brownsville, Texas. Implemented and maintained Solaris, HP-UX, Linux, Windows, and Novell NetWare systems for businesses throughout region. Forged strategic relationships that contributed to company's viability. Secured partnerships with several ISP start-up companies that led to an avalanche of new service contracts; a second office was later opened to accommodate new business. Spearheaded initial migration contract with the Brownsville Economic Development Council, which produced future revenues from city and corporate members. Leveraged relationships in the medical community that led to a large service contract with Columbia Valley Regional Medical Center, which contributed to future contracts with health care companies throughout region that tripled service revenues within a year.

**1995 – 1996** — **CTO** — *South Texas Internet*
Provided initial service calls, troubleshooting and software installations to a vast array of customers during start-up phase. Hired and trained technical staff. Maintained phone-bank, leased lines, and servers.

## Scientific

**2016 – 2019** — **Data Scientist & Engineer** — *UT Arlington*
Primary research focused on prototyping models for detecting facial affects and developing methods for creating viable computer generated training data using Generative Adversarial Networks.

**2018** — **REU Site Research Mentor** — *UT Arlington*
Mentored undergraduate research assistants in my affective computing research. Devised research objectives to build an assistive emotion recognition technology for people with autism and blindness. Supervised work. Funded by the NSF.

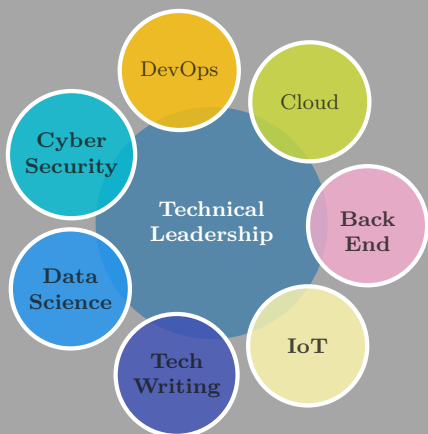**2018** — **Research Associate** — *UT Arlington*
Summer appointment.

# MARK HAVENS
## Computer Scientist/Engineer

## Communication ———

| | | |
|---|---|---|
| 🔍 | Verbal | ●●●●● |
| ✏️ | Non-Verbal | ●●●●● |
| 💬 | Visual | ●●●○○ |
| ♥ | Written | ●●●●● |
| 🤲 | Active Listening | ●●●●○ |
| ✋ | Clarity | ●●●●○ |
| 💬 | Confidence | ●●●●● |
| 👍 | Interviewing | ●●●●○ |
| 🤝 | Negotiation | ●●●●● |
| 👤 | Personal Branding | ●●●●○ |
| ⚖️ | Persuasion | ●●●●● |
| 👁 | Presentation Skills | ●●●●● |
| 👥 | Public Speaking | ●●●●○ |
| 📖 | Storytelling | ●●●●● |
| 🔖 | Diplomacy | ●●●○○ |
| 💗 | Empathy | ●●●●○ |
| ✌️ | Friendliness | ●●●●● |
| ⚠️ | Humor | ●●●●● |
| 👥 | Networking | ●●●○○ |
| ⋯ | Patience | ●●●●○ |
| 👍 | Pos. Reinforcement | ●●●●● |
| ♡ | Sensitivity | ●●●●● |
| ✋ | Tolerance | ●●●●● |

## Industry Overview —

I have pivoted with ongoing trends and have engaged in many exciting projects. I have found a niche in executive level technical consulting. This is complemented by paid technical writing work that showcases the depth and breadth of my knowledge and background. Some of the various industry descriptions to the right are not provided in detail do to non-disclosure agreements.

DevOps · Cloud · Cyber Security · Technical Leadership · Back End · Data Science · Tech Writing · IoT

| Year | Role | Institution |
|---|---|---|
| 2018 | **Researcher** | U.S. Air Force |
| | Traveled to Rome, New York for a research internship at U.S. Air Force Research Laboratory. | |
| 2017 | **Research Associate** | UT Arlington |
| | Summer appointment. | |
| 2016 | **Space Grant Research Team Leader** | UT Arlington |
| | Mentored, organized, and supervised undergraduates while designing a prototype of a wireless mesh network for the International Space Station. Sponsored by NASA. | |
| 2004 | **Lab Assistant** | UT Rio Grand Valley |
| | Spring semester; assisted network security research. | |
| 2003 | **Lab Assistant** | UT Rio Grand Valley |
| | Fall semester; assisted network security research. | |
| 2003 | **Lab Assistant** | UT Rio Grand Valley |
| | Spring semester; assisted computing education research. | |
| 2002 | **Lab Assistant** | UT Rio Grand Valley |
| | Fall semester; assisted computing education research. | |

## Writing

| Year | Role | Institution |
|---|---|---|
| 2020 | **Technical Copywriter** | Hyperglance |
| | Created technical and marketing web copy for cloud automated documentation platform. | |

## Teaching

| Year | Role | Institution |
|---|---|---|
| 2020 | **Internet of Things (IoT)** | Dallas Makerspace |
| | Conducted introduction courses on Raspberry Pi and ESP32 platforms. | |
| 2019 | **Cloud Engineering** | Dallas Makerspace |
| | Provided intermediate courses on how to build virtual machines in the cloud using Google Cloud Platform. | |
| 2018 | **CSE 3310 - Fundamentals of Software Engineering** | UT Arlington |
| | TA appointment; fall semester. | |
| 2018 | **CSE 3310 - Fundamentals of Software Engineering** | UT Arlington |
| | TA appointment; spring semester. | |
| 2017 | **CSE 2312 Computer Organization and Assembly Language Programming** | UT Arlington |
| | TA appointment; fall semester. | |
| 2017 | **CSE 2312 Computer Organization and Assembly Language Programming** | UT Arlington |
| | TA appointment; spring semester. | |
| 2017 | **CSE 4317 Computer System Design Project II** | UT Arlington |
| | TA appointment; spring semester. | |
| 2017 | **CSE 4317 Computer System Design Project II** | UT Arlington |
| | TA appointment; spring semester. | |
| 2016 | **CSE 2312 Computer Organization and Assembly Language Programming** | UT Arlington |
| | TA appointment; fall semester. | |
| 2016 | **Video Production** | Dallas Makerspace |
| | Taught introductory courses on Open Broadcaster Software (OBS) for students to learn how to increase production value of self published videos and streaming online. | |
| 2015 – 2016 | **Amazon Product Distribution & Pricing Models** | Dallas Makerspace |
| | Introductory courses on distribution strategies using Amazon FBA. | |
| 2015 | **Candle Making** | Dallas Makerspace |
| | Beginner courses in introductory candle making and recycling used candles. | |
| 1996 – 1998 | **Introduction to UNIX** | Hands on Computer Training Center |
| | Conducted introductory courses UNIX. | |

# MARK HAVENS
## Computer Scientist/Engineer

## Programming ——————

| Skill | Rating (of 5) |
|---|---|
| Bash | ●●●●● |
| C | ●●●●● |
| Tex/LaTeX | ●●●●● |
| Awk | ●●●●● |
| Python | ●●●●○ |
| C++ | ●●●●○ |
| HTML | ●●●●○ |
| Sed | ●●●●○ |
| Lisp | ●●●○○ |
| Javascript | ●●●●○ |
| Java | ●●●●○ |
| SQL | ●●●●○ |
| Perl | ●●●●○ |
| PHP | ●●●○○ |
| Assembly | ●●●○○ |
| Pascal | ●●●●○ |
| Ruby | ●●●○○ |
| Tcl/Tk | ●●●○○ |
| COBOL | ●●●○○ |
| MATLAB | ●●●○○ |
| PROLOG | ●●○○○ |
| FORTRAN | ●●○○○ |
| C# | ●●○○○ |
| CSS | ●●○○○ |
| Go | ●○○○○ |
| R | ●○○○○ |
| Scala | ●○○○○ |
| Rust | ●○○○○ |

## Tools ——————

| Tool | Rating (of 5) |
|---|---|
| Linux | ●●●●● |
| RegEx | ●●●●○ |
| Git | ●●●●○ |
| Matlab | ●●●○○ |
| Visio | ●●●●● |
| Lucidchart | ●●●●● |
| SSH | ●●●●● |
| Vi | ●●●●● |
| GitHub | ●●●●○ |
| Google Cloud | ●●●●● |
| Amazon AWS | ●●●●● |
| Microsoft Azure | ●●●●○ |
| Excel | ●●●●○ |
| PowerPoint | ●●●●○ |

---

**1996 – 1998**  **C++ Programming**   Hands on Computer Training Center
Conducted introductory courses C++.

## DevOps Engineering

**2020**  **DevOps Engineer**   Start-up
Provided as-needed emergency support for Docker container builds.

**2019**  **DevOps Engineer**   Start-up
Created a custom Docker container for automation roll-out of unreleased version of OpenMaint.

**2019**  **Software Test Engineer**   Start-up
Provided usability testing and analysis for Kubernetes automation tool.

**2006 – 2010**  **Lead DevOps Engineer**   Verizon
Operated in combined roles for multiple internal software development teams and research groups, including Systems Administrator, Build Manager, Technical Architect, and Project Manager. Provided expert advisory to directors, managers, technical architects, software architects, and developers, and made recommendations for correcting design, development, and systems issues.

## Systems Engineering

**2019**  **Systems Security Engineer**   US Air Force
Provided security consulting to on-site technical system administrative and security engineering air force staff.

**2019**  **Cloud Engineer**   Start-up
Conducted enterprise level migration of retail web portal.

**2019**  **Systems Engineer**   Bristol Group
Resolved ongoing back-end issues with primary PHP portal and automated mail responding tool.

**2010 – 2012**  **Senior Technical Solutions Architect**   AT&T
Part of a technical leadership team that made hundreds of millions of dollars' worth of infrastructure design and management decisions. Developed first nationwide back-end cloud infrastructure blueprints that allowed customers to pay their bill from their iPhone. Provided expert advisory to peers and senior leadership; made recommendations for changes in policy, design standards, and technical direction of the company.

**2000 – 2001**  **UNIX Engineer**   Sprint
Member of a specialized business development team that analyzed and implemented IT operation procedures. Planned and implemented various long-term systems infrastructure and security projects. Wrote monitoring scripts. Took initiative to write a suite of administrative tools in Perl that allowed the team to finish an access control project over a year ahead of schedule. Devised algorithm for a script that lead to the success of large NIS merger project.

**1999**  **Database Engineer**   Microsoft
Collaborated with Microsoft's top specialists while acquiring a wealth of industry knowledge. Solved database security, connectivity and SQL problems for web developers; regularly wrote code to work around product limitations. First to discover a security vulnerability with server extensions that forced many web developers to use alternate database connection methods when dealing with sensitive data.

**1998 – 1999**  **Technical Project Engineer**   First Horizon Home Loan
Advanced to become a member of a top level enterprise projects team focused on information security, Y2K, migrations, and large-scale deployments; coordinated with senior staff and reported to top management. Rapidly promoted after leading a successful two-week operation system migration, succeeding existing IT team after the second month of service. Envisioned and deployed one of the first multi-platform web-based network monitoring systems. Deployed many emerging multi platform web-enabled technologies.
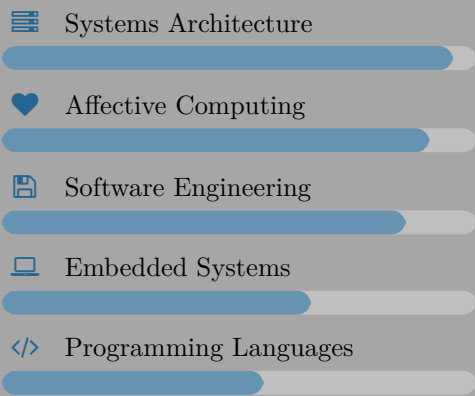
# MARK HAVENS

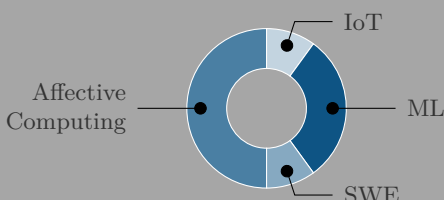Computer Scientist/Engineer

## Problem-Solving ———

| | | |
|---|---|---|
| 📈 | Analysis | ● ● ● ● ○ |
| 🖌 | Artistic Sense | ● ● ● ● ● |
| 💬 | Brainstorming | ● ● ● ● ● |
| ♥ | Design | ● ● ● ● ● |
| 📷 | Design Sense | ● ● ● ● ● |
| 👐 | Divergent Thinking | ● ● ● ● ● |
| 💬 | Experimenting | ● ● ● ● ● |
| ☁ | Imagination | ● ● ● ● ● |
| ⚡ | Innovation | ● ● ● ● ● |
| 💡 | Insight | ● ● ● ● ● |
| ⚡ | Inspiration | ● ● ● ● ● |
| 💡 | Lateral Thinking | ● ● ● ● ● |
| ✋ | Logical Reasoning | ● ● ● ● ● |
| 🖧 | Mind Mapping | ● ● ● ● ○ |
| 👁 | Observation | ● ● ● ○ ○ |
| 🖥 | Persistence | ● ● ● ● ● |
| ? | Questioning | ● ● ● ● ● |
| ↻ | Reframing | ● ● ● ● ● |

## Subject Knowledge —

📚 Systems Architecture

♥ Affective Computing

💾 Software Engineering

🖥 Embedded Systems

</> Programming Languages

## Active Research ———

Academic

All ongoing academic research intersects with facial affects within the Affective Computing domain. Most work is focused on using data science and machine learning to computationally guess what other people are thinking and feeling just by processing images of their faces and body language.



## Information Technology

| | | |
|---|---|---|
| 1997 – 1998 | **IT Service Technician** | Foremost Technology |

Provided subcontract services including cable runs, software installations, network configurations, troubleshooting, and consulting.

| | | |
|---|---|---|
| 1996 – 1998 | **IT Service Technician** | Whispering Palms Nursing Center |

Implemented an Ethernet 10baseT network consisting of 13 new and preexisting systems running Windows for Workgroups 3.11 and Windows 95 operating under Windows NT 4.0. Migrated existing DOS accounting and management software to Windows NT. Installed, programmed and maintained a computerized time clock that automated the payroll process of over 150 employees. Provided upgrades and troubleshooting to all systems. Provided technical support to staff.

| | | |
|---|---|---|
| 1995 – 1996 | **IT Service Technician** | Columbia Valley Regional Medical Center |

Installed new computer systems in Administrative and Personal departments and upgraded existing systems to support Windows 95 operating under Novell 3.12. Provided hardware and software support to staff members. Assisted in the migration from Tokin Ring and Arcnet bus topology to Ethernet 10baseT.

| | | |
|---|---|---|
| 1995 | **Information Systems Support Specialist** | Texas Attorney General |

Supported existing Ethernet networks and diagnosed cabling and routing problems. Provided hardware and software support for NetWare 3.12 client systems. Vital part of an information services team responsible for a state wide hardware upgrade for all local and branch office computer systems.

| | | |
|---|---|---|
| 1994 – 1995 | **Systems Administrator** | Price Village Medical Center |

Supported existing ARCnet network and implemented Ethernet on all new systems. Implemented and supported new branch office network running Netware 3.12. Supported existing Netware 2.2 network and all workstations.

| | | |
|---|---|---|
| 1992 | **Computer Technician** | Walk's Office Technology |

Built and tested over 400+ DOS workstations. Assisted in the network infrastructure buildout of 400+ workstation Novell network for Olmito School System.

| | | |
|---|---|---|
| 1989 – 1994 | **IT Freelancer** | Independent |

Provided as-needed technical support to the local business community. Conducted hardware upgrades, system builds, solved hardware and software problems, and resolved networking issues.

## Research

### Unpublished Papers

| | | |
|---|---|---|
| Complete | **A Survey of Big Data for Utilizing Automatic Micro Expression Recognition Techniques in Affective Computing Applications: Data Taxonomy, Datasets, and Data Blending for Applying FACS Dimensionality Reduction Protocols** *Havens, Mark* | |
| Complete | **A Survey of Micro Expression Recognition Techniques for Affective Computing Applications** *Havens,Mark* | |

### Ongoing Research

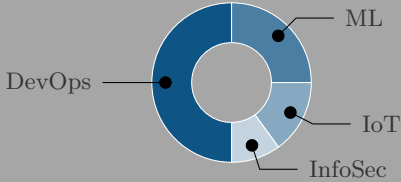| | | |
|---|---|---|
| In Preparation | **Generating Photorealistic Micro Expression Image Data with FACS Features Using Conditional Generative Adversarial Networks** *Havens, Mark* | |
| In Preparation | **Towards Reclassification of Automatic Facial Expression Recognition Data** *Havens, Mark* | |

# MARK HAVENS
Computer Scientist/Engineer

## Active Research ———

| In Preparation | **Empirically Predicting Generalized Individual Behavior with Automatic Facial Expression Recognition and Convolutional Neural Networks** |
| --- | --- |
| | *Havens, Mark* |
| In Preparation | **Distributed Multi-Camera Wireless Sensor Network Identity Tracking for Automating the Modeling of Human Affects** |
| | *Havens, Mark* |
| In Preparation | **Algorithmic Determination of Social Influence for Multi-Camera Wireless Sensor Networks** |
| | *Havens, Mark* |

## Commissioned Publications

| 2020 | Reverse Engineer Docker Images into Dockerfiles |
| --- | --- |
| 2020 | Trapping Hackers with Containerized Deception |
| 2020 | Raspberry Pi Cluster Emulation With Docker Compose |

## Awards & Honors

| 2018 | REU Research Grant: Assistive Technologies for People with Disabilities | NSF |
| --- | --- | --- |
| 2016 | Scholarship Award: Prototype of a Space WiFi Mobile, Disruption-Tolerant, Ad-Hoc Mesh Network | NASA |
| 2016 | GAANN Fellowship Award | DOE |

## Extra-Curricular Activities

| Volunteerism | Makerspaces, Nonprofit Start-ups, Community Leadership, Organizational Development |
| --- | --- |
| The Arts | Singing, Digital Music Production, Digital Art, Writing (Science Fiction & Horror), Video Production, Cooking, Baking, Brewing, Winemaking, Candle Making |
| Technology | Electronics, Embedded Systems, Virtual Reality, Digital Trends, Vintage Computing, Vintage Gaming, Minecraft |