

Mark Havens

Computer Scientist/Engineer

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.

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
- Remote Team Management
- Talent Management
- Meeting Management
- Agility
- Coaching
- Conflict Resolution
- Cultural Intelligence
- Deal-Making
- Decision-Making
- Delegation
- Facilitating
- Clear Feedback
- Difficult Conversations
- 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, workspace, volunteers, and distribution during the onset of the 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 were sold as a service to Amazon vendors 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 to meet operational 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 the region. Forged strategic relationships that contributed to the 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 healthcare companies throughout the 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 the start-up phase. Hired and trained technical staff. Maintained phone-bank, leased lines, and servers.

Data Scientist & Engineer

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.

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 Grande Valley

Spring semester; assisted network security research.

2003

Lab Assistant

UT Rio Grande Valley

Fall semester; assisted network security research.

2003

Lab Assistant

UT Rio Grande Valley

Spring semester; assisted computing education research.

2002

Lab Assistant

UT Rio Grande Valley

Fall semester; assisted computing education research.

Communication

2020

Technical Copywriter

Hyperglance

Created technical and marketing web copy for cloud automated documentation platform.

Teaching

2020

Internet of Things (IoT)

Dallas Makerspace

Conducted introductory courses on Raspberry Pi and ESP32 platforms.

2020

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 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.

2015

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.

1996 - 1998

Amazon Product Distribution & Pricing Models

Dallas Makerspace

Introductory courses on distribution strategies using Amazon FBA.

1996 - 1998

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 on UNIX.

Programming

2020

- Kubernetes
- Docker
- JavaScript
- Python

2019

- C
- C++
- PHP
- R
- SQL

2006 - 2010

- Perl

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

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.

Informative

1997 - 1998

IT Service Technician

Fonemost 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 Token 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 statewide 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

Industry

Ongoing industry research often depends on paid commissioned publications which are not published to academic journals. Other research cannot be disclosed due to non-disclosure agreements. Most research is typically focused on DevOps and prevailing trends.

In Preparation

- *A Survey of Continuous Integration/Continuous Deployment in Highly Distributed Team Environments*

- *A Survey of Trending DevOps Automation Tools*
- *A Survey of Trending Containerization Technologies*
- *Advanced Automation Techniques for Large Scale Cloud Infrastructure*
- *Dynamic Software Migration Strategies for Large Scale Cloud Infrastructure*
- *Advanced Techniques for Infrastructure as Code*
- *Dynamic Canary Analysis for Infrastructure as Code*
- *Dynamic Canary Analysis for Continuous Integration*
- *A Survey of Trending Continuous Integration Tools*
- *A Survey of Trending Continuous Deployment Tools*
- *Advanced Automation Techniques for Continuous Integration*
- *Advanced Automation Techniques for Continuous Deployment*
- *A Survey of Trending Kubernetes Automation Tools*
- *Advanced Automation Techniques for Kubernetes*
- *A Survey of Trending Docker Automation Tools*
- *Advanced Automation Techniques for Docker*