

EDUCATION

Michigan State University, East Lansing, MI

Ph.D. in Computer Science

1997

Dissertation: Noise Tolerant Compression Protocols for Wireless Environments
Chairman: Dr. Matthew Mutka

Texas A&M University, College Station, TX

M.S. in Computer Science

1991

Thesis: Graph Characteristics of Data-Flow Graphs
Chairman: Dr. Udo Pooch

Texas A&M University, College Station, TX

B.S. in Computer Science

1989

Minor: Mathematics

EXPERIENCE

The University of Texas at Dallas' Department of Computer Science, Dallas, TX

Director, Executive Master in Software Engineering Program

2017 – Present

Associate Professor of Instruction

Sept 2020 - Present

Assistant Professor of Instruction

2016 – Aug 2020

Part-Time Lecturer

2012 - 2015

- CS 1335 – Computer Science I for Non-Majors
- CS 1336 – Introduction to Programming
- CS 1337 - Computer Science I
- CS 3162 - Professional Responsibility in Computer Science and Software Engineering
- CS3377 - C/C++ Programming in a UNIX Environment

SqwaQ, Inc, Dallas, TX

Principal

VP of Software Engineering

2018 - Present

- Developed embedded IOT hardware and software for bonded LTE modems (Sierra Wireless). Integrated Layer 3 IP bonding with appropriate routing and optimizations to create a full optimized Linux based LTE router (including WiFi access).
- Developed with Secure Boot technologies, the Yocto project, Ansible, Redis, Git, Odoo, Linux udev, ffmpeg, lcdproc, menter.io (for FOTA updates), Hamachi, hostpad, Webmin, Prometheus, Grafana, and many Linux sub-systems.
- Drove development of two generations of custom PCBs to house LTE modems.
- Drove development of full custom hybrid aluminum/injection molded enclosures.
- Worked with team organize company and to pitch to Angels/VCs for funding.

Perceptive Trekker, Dallas, TX*Principal***2010 - Present**

- Technical research and support for intellectual property litigation
- Highly Available and Distributed Object Storage Solutions
- High Security Remote Access Solutions
- IoT Development and Deployment

NetMass Incorporated, Richardson, TX*Principal, President, CTO***1998 - Present**

- Utilizing colocation centers, designed and built out multiple geo-replicated datacenters to host cloud-based multi-tenant backup data.
- Integrated web and database interfaces to sales, accounting, and billing. Integrated multiple offices using IPSEC VPNs, IP Telephony, and distributed file / CRM systems.
- Built out internal and external automated monitoring and notification systems.
- Negotiated all purchases and contracts.

Texas Instruments, Dallas, TX*Member of the Technical Staff***1984 - 1999**

- Worked in the Communications Systems Engineering branch of the Digital Signal Processing Research and Development Lab. Duties included development of real-time embedded systems for communications platforms (cable modems, xDSL, and residential Ethernet). Participated in the IEEE 802.14 cable modem standards process. Participated in the Home Phone Networking Alliance (HPNA) standards process (1999).
- Designed and implemented the storage mechanism for an automatic visualization indexing system using TI's C++ object oriented database. Supervisors: Jon Courtney and Bruce Flinchbaugh (1994).
- Designed and started implementation of a real-time multiprocessor control system for an Applied Materials vapor deposition semiconductor fabrication device. This work was done as part of the Microelectronics Manufacturing Science and Technology (MMST) project. Supervisors: Richard Beaver and Dennis Draheim (1992).
- Assisted with the design of an X interface to a SUN based Computer Architecture Evaluation Toolset using C++. Supervisors: Brian Kennedy and Larry Spry (1990).
- Assisted with the design of new parallel computer architecture. Implemented some data gathering and support tools. Supervisor: Larry Spry (1988).
- Developed a graphical interface for a Common LISP environment on the TI Explorer. Supervisors: Doug Johnson and Penny Muncaster-Jewell (1987).
- Completed a Pascal to LISP translator/compiler for the specific purpose of porting TeX to the TI Explorer LISP machine. Supervisor: Penny Muncaster-Jewell (1986).
- Developed an Expert System for Rome Air Development Corporation. Demoed to Air Force members in New York. Supervisors: John Blakemore and Fried Elliot (1984-1985).

Michigan State University's Department of Computer Science, East Lansing, MI**Research Assistant****1993 - 1996**

- Consulted with TechSmith Corporation on the design and implementation of the Foray PPP Server and supporting products (1995-96).
- Implemented a worldwide low-bandwidth test bed based on a modified UNIX kernel and the Berkeley Packet Filter. Used the test bed for data collection and dissertation related analysis of low-bandwidth networks (1994-95).
- Worked on a flexible graph-object model for interoperating data and program systems (1994).
- Worked on the design and implementation of the HICLASS hierarchical classification taxonomic database system (1993).

Michigan State University's Department of Computer Science, East Lansing, MI**Teaching Assistant****1991 - 1992, 1996**

- CPS-100 (Introduction to Computing)
- CPS-230 (Algorithms and Computing)
- CPS-330 (Data Structures and Programming)
- CPS-410 (Operating Systems)

Texas A&M University's Department of Entomology, College Station, TX**Computer Programmer****1986 - 1991**

- Managed the SUN SPARCstation network.
- Networked and managed the Symbolics LISP-machines.
- Worked in conjunction with NASA and the Texas A&M RECON group modeling closed environment life support systems for the space shuttle. This modeling was done using KEE on Symbolics LISP-machines.

Texas A&M University's Academic Computing Services, College Station, TX**Research Assistant****1990**

- Designed and implemented a universal bitmap to TeX-PK file format conversion utility.
- Designed and implemented an Apple Macintosh to universal bitmap format conversion utility for use with the above utility.

IBM, Dallas, TX**Computer Programmer****1989**

- Prototyped an icon selection model for use in Office Vision.
- Developed a prototype object oriented window platform that allows XWindows and Presentation Manager (OS2) to be displayed with the same source code.

Texas A&M University's Department of Computer Science, College Station, TX**Computer Lab Operator****1985-1986**

- Assisted with the management of VAX Ultrix, TI Explorer, and Symbolics LISP machines.
- Provided user support for introduction computer science classes.

PUBLICATIONS AND PAPERS

"Two-way broadband CATV-HFC networks: state-of-the-art and future trends"

S. Perkins and A. Gatherer, *Computer Networks: The International Journal of Computer and Telecommunications Networking*, Elsevier Science, B.V., vol. 31, 1999, pp 313-326.

"Characteristics of Low-Bandwidth Conversations"

S.J. Perkins and M.W. Mutka, *Proceedings of the IEEE International Conference on Communications*, vol. 3, Dallas, Texas, June, 1996, pp. 1591-1595.

"Low-Bandwidth Access: An Evaluation of Application Level Protocol Compressibility"

S.J. Perkins and M.W. Mutka, *Proceedings of the International Conference on Telecommunication Systems*, Nashville, Tennessee, March, 1996, pp. 97-108.

"A New Data Model for Biological Classification"

S. Jung, S. Perkins, Y. Zhong, S. Pramanik, J. Beaman, , *CABIOS*, Vol 11, No 3, 1995, pp. 237-246.

"A Time-Step Simulation Model for a Life Support System"

M.E. Makela, S.J. Perkins, H. Presig, F.E. Little, *Progress Report | Regenerative Life Support Systems*, NASA Space Research Center SRC-4-5873-2, March, 1988, pp. 49-72.

PATENTS

Processes, articles, and packets for network path diversity in media over packet applications (USPTO # 6,496,477)

Integrated circuits, systems, apparatus, packets and processes utilizing path diversity for media over packet applications (USPTO # 6,930,983)

Sending real-time and dependent information over separate network paths (USPTO # 7,693,062)

Packet Circuitry Addressing Independent and Dependent Information to Different Proxies (USPTO # 7,961,758)

Media packet networking appliance sending diversity packets to second proxy (USPTO # 8,396,058)

IC generating packets containing destination, first, and second proxy addresses (USPTO # 8,824,460)

MEMBERSHIPS AND INTERESTS

Network Protocols and Architectures

Highly Available and Scalable Storage

Highly Available Services

IEEE/ IEEE Computer Society Membership since 1992

Control of Automated Lighting Systems

IOT Forum with TechTitans