

ALEC R. GORJESTANI
15676 Crestone Court
Rosemount, Minnesota 55068
(651) 344-9958 alecg@me.umn.edu

PROFESSION: Mechanical Engineer specializing in sensing and control of dynamic systems, digital control, embedded and real-time software development.

EDUCATION:

- 9/06-Present **University of Minnesota**
Master of Business Administration, Carlson School of Management
In progress, 12 credit completed
- 3/96-2/99 **University of Minnesota**
Master of Science, Mechanical Engineering
Minor in Electrical Engineering
- Versed in both classical and state space control methodologies
 - Expert understanding of real time embedded system programming concepts
- 1/89-5/93 **University of Wisconsin-Madison**
Bachelor of Science, Mechanical Engineering
- Designed feathering propeller using team concept for senior design project
 - Studied abroad at Moscow State University, Moscow, Russia

EXPERIENCE:

- 1/97-Present **University of Minnesota, Minneapolis, Minnesota**
Research Fellow, Mechanical Engineering Department
- Lead design of a roadside intersection surveillance system using radar, laser, visible and infrared cameras with image processing
 - Designed and implemented gang plow assistive system in which trailing snowplow autonomously followed the lead plow using DGPS, wireless communication and actuators.
 - Implemented a longitudinal collision avoidance control algorithm aboard a Navistar tractor using radar and laser scanner, validated on highway
 - Designed and implemented novel range sensor filter using DGPS, radar and geospatial database to filter out false targets in real-time
 - Designed and performed experiment to measure the dynamic accuracy of DGPS sensors on a vehicle using camera and image processing techniques
 - Formulated methodology to dynamically assess accuracy of automotive range sensors using vehicle mounted DGPS and wireless networking
- 9/96-3/97 **Teaching Assistant**
- Robotics; programmed real-time simulation of truck for final project; maintained class web page, wrote/graded final exam, held office hours
 - Engineering Graphics; taught Pro Engineer CAD software, held office hours
- 6/96-4/97 **Minco Products, INC., Fridley Minnesota**
Student Engineer
- Designed fixtures, jigs, presses and conveyor belt for the machine shop
 - Conceived and implemented design changes for current product lines
 - Implemented ISO 9000 standard for machine shop
- 2/95-3/96 **Great Lakes Communications, Milwaukee Wisconsin**
Systems Operator Supervisor
- Managed all System Operators in all company locations
 - In charge of assigning and following up on all data processing work orders and requests
 - Trained all System Operators on computer system, software and procedures
- 5/92-8/94 **System Operator**
- Wrote programs to repair databases, change field formats and look up information
 - Troubleshooting, repair and installation of computer work stations
- 5/87-5/93 **Hy-Tech Tool and Die, Mequon Wisconsin**
Production Technician
- Ran hand lathes and vertical mills to machine parts to required specifications on drawing

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- PATENTS:** US Patent No.: US 7,072,764 Real time high accuracy geospatial database for onboard intelligent vehicle applications
US Patent No.: US 6,977,630 B1, Mobility Assist Device
- AWARDS:** Center for Transportation Studies 1998 outstanding student of the year
- PUBLICATIONS:** L. Alexander, P.M. Cheng, M. Donath, A. Gorjestani, A. Menon, B. Newstrom, C. Shankwitz, N. Ward, and R. Starr. "Rural Expressway Intersection Surveillance for Intersection Decision Support System", Transportation Research Record, 2006, pp. 26-34.
- N. Ward, L. Alexander, P. Cheng, A. Gorjestani, B. Newstrom, C. Olson, C. Shankwitz, W. Trach, M. Donath. "A Demonstration of a Vision Enhancement System for State Patrol Vehicles", Intelligent Transportation System, 2004, vol. 8, pp. 169-185.
- A. Menon, A. Gorjestani, C. Shankwitz and M. Donath. "Roadside Range Sensors for Intersection Decision Support", The 7th International IEEE Conference on Intelligent Transportation Systems, Washington D.C., USA, October 2004.
- M. Sergi, B. Newstrom, A. Gorjestani. "Dynamic Evaluation of High Accuracy Differential GPS". ION 2003 National Technical Meeting, Anaheim, USA, January 2003.
- L. Alexander, P. Cheng, M. Donath, A. Gorjestani, B. Newstrom, C. Shankwitz, W. Trach. "Bus Rapid Transit Technologies: Assisting Drivers Operating Buses on Road Shoulders, Final Report, Volume I, No. CTS 04-12, December 2003.
- A. Gorjestani, B. Newstrom, C. Shankwitz and M. Donath. "Advanced Range Sensor Processing Using DGPS and a Geospatial Database", The 4th International IEEE Conference on Intelligent Transportation Systems, Oakland, USA, August 2001.
- A. Gorjestani, C. Shankwitz and M. Donath. "Impedance Control for Truck Collision Avoidance", 2000 American Control Conference, Chicago, USA, June, 2000.
- A. Gorjestani and M. Donath. "Longitudinal Virtual Bumper Collision Avoidance System Implemented on a Truck", 6th World Congress on Intelligent Transport Systems, Toronto, Canada, November 1999.
- A. Gorjestani, M. Donath, L. Alexander. "Radar Based Longitudinal Virtual Bumper Collision Avoidance System Implemented on a Truck". Technical Report, Minnesota Department of Transportation Office of Research Administration, Final Report 2000-07, March 1999.
- A. Gorjestani, S. Bajikar, T. Pham, M. Donath. "Evaluation of Radar for Snowplows: Initial Results". Technical Report, Minnesota Department of Transportation Office of Research Administration, Final Report 1999-09, April 1998.
- S. Bajikar, A. Gorjestani, P. Simpkins, and M. Donath. "Evaluation of In-Vehicle GPS-Based Lane Position Sensing for Preventing Road Departure". *Proceedings of the IEEE Conference on Intelligent Transportation System*, Boston, Massachusetts, 1997.
- COMPUTERS:** **Operating Systems** – Real Time, UNIX, Mac, Windows
Programming Languages - Versed in both procedural and object oriented programming methods, C, C++, Java, XML, HTML, PERL, Python
CAD – Pro Engineer, AutoCAD
Math/Simulation - MATLAB, Simulink
Others – Spreadsheet, word processing, power point

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REFERENCES: Furnished upon request
