

Shrikant Gurunath Fulari

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OBJECTIVE: Seeking full time job as a Transportation/Traffic Engineer

EDUCATION:

Virginia Tech, Virginia | Master of Engg. in Civil Engg. | GPA: 3.92/4 Jan 2016 – May 2017 (Expected)
Indian Institute of Technology(IIT), Madras, India | Master of Science in Civil Engg. | GPA: 7.8/10 Aug 2013 – May 2015
Walchand College of Engg. (WCE) Sangli, India | Bachelors in Civil Engg. | GPA: 7.45/10 July 2007 – Aug 2011

PROFESSIONAL EXPERIENCE:

- **Graduate Research Assistant (VIRGINIA TECH)** Jan 2016 - Dec 2016
Guidelines on integrated use of Controller Actuated Beacons (CAB) with dilemma zone (DZ) protection systems
 - Worked on analyzing real time signal controller data and Wavetronix sensor traffic data towards identification of conditions when drivers accelerate and get trapped in DZ due to the CAB operation
 - Based on the analysis, provided guidance on placement of CAB's and change in DZ-protection boundaries to avoid situations of drivers getting trapped
 - **Study of driver behavior on the vicinity of advanced warning signs**
 - Worked on evaluating driver behavior on the vicinity of advanced warning signs at high-speed isolated rural/suburban intersections
 - Developed the required network in DriveSafety DS-250 model driving simulator using TCL Script in the HyperDrive software
 - Analyzed driver response for a combination of scenarios based on three design variables namely sign location, overlap time and time to flasher signal using excel and JMP tool, provided guidelines regarding design of three considered design variables
 - **Graduate Research Assistant (IIT MADRAS)** July 2013 - June 2015
Traffic State Estimation under Uncertain Sensor Data (Master's thesis)
 - Objective: Estimation of key traffic variables under uncertain automated traffic sensor data for real time implementation
 - Worked on formulation of models using dynamical systems approach for traffic state estimation by explicitly incorporating the sensor error statistics
 - Performed density and speed estimation using dynamical systems approach with a multi-sensor data fusion method
 - Used Kalman Filter based and Particle Filter based methods for traffic state estimation
 - Used Artificial Neural Networks (ANN) for density and speed estimation with different methods of offline training and testing while using data from multiple sensors
 - Used vehicle based sensor (GPS and Bluetooth) data for estimating delay at signalized intersections
 - **Project Officer - Intelligent Transportation System Laboratory (IIT MADRAS)** July 2015 – Dec 2015
 - Aided in real time implementation of ITS applications developed at IIT Madras for traffic congestion analysis and in enabling automated data collection and processing
 - **Graduate Engineering Traineeship (SHAPOORJI PALLONJI & CO LTD, INDIA)** Aug 2011 – May 2011
 - Performed activity scheduling and resource allocation, execution of construction drawings and prepared weekly and monthly progress reports. Learned Management Information System (MIS)
 - Project- Asian Paints Ltd. Pune, India
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SKILLS:

- Technical Skills: Traffic modelling and simulation, Traffic Signal Design and Analysis, Travel Time Analysis, Emission Studies, Data Collection and Analysis, Driving Simulator Analysis, Programming, Report Writing
 - Software and Programming Skills: VISSIM, VISTRO, CUBE, SYNCHRO, TRANSIMS, MATLAB, R Studio, SysML, AutoCAD, SPSS, JMP, Microsoft Office
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ACADEMIC PROJECTS:

- **Link based traffic density and emissions estimation for real time traffic analysis (Virginia Tech)** Jan 2016 – May 2016
 - Designed network of a main street in Blacksburg, VA in VISSIM, collected high resolution traffic and signal change data
 - Implemented Particle filtering approach for density estimation for identifying congested links, provided optimized signal plans using VISTRO, estimated emissions for before and after scenarios and performed a comparison analysis
- **Autonomous Vehicles (AV): Tests-Benefits-Costs (Virginia Tech)** Jan 2016 – May 2016
 - Proposed several test bed facilities for Autonomous Vehicles for Virginia Tech's Transportation Research Facility Phase III
 - Proposed test for AV in absence of communication, signalized/un-signalized intersections, pedestrian crossings and inclement weather, parking and transit stops to be conducted at the research facility
 - Performed cost benefit analysis for the proposed tests and future implementation of Autonomous Vehicles
- **Project on Design of Multilevel Interchange (IIT Madras)** Aug 2013–Dec 2013
 - Conducted survey of Tidel intersection, Chennai, India and collected peak, off peak vehicle class wise traffic count data

- Designed a multilevel interchange for eliminating signals, points of conflicts, reducing congestion and easy movement of traffic using AUTOCAD
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GRADUATE COURSES:

Data Analytics (Computer Science), Transportation Systems Planning, Traffic Characteristics and Flow, Traffic Signal Systems Operation and Control, Mass Transit Systems, Transportation and Land Use, Sustainable transportation Infrastructure, Geometric Design of Highways, Analytical Techniques in Transportation Engg, Intelligent Transportation Systems, Traffic Engineering and Management, Traffic Flow Theory, Urban Transportation Planning

JOURNAL PUBLICATIONS:

- Fulari, Shrikant G., Vanajakshi, Lelitha., Subramanian, Shankar C., T. Ajitha. (2017) "Artificial Neural Network Based Traffic State Estimation Using Erroneous Automated Sensor Data". ASCE's Journal of Transportation Engineering, Part A: Systems. (Accepted for publication).
 - Fulari, Shrikant G., Vanajakshi, Lelitha., Subramanian, Shankar C., T. Ajitha. (2016) "Traffic Flow Estimation at Error Prone Locations using Dynamic Traffic Flow Modelling". Transportation Letters: The International Journal of Transportation Research. DOI: 10.1080/19427867.2016.1271761.
 - Fulari, Shrikant G., Vanajakshi, Lelitha., Subramanian, Shankar C. (2016) "Addressing Errors in Automated Sensor Data for Real Time Traffic State Estimation using Dynamical Systems Approach". IET Intelligent Transport Systems, Volume 10, Issue 10, pp. 683-690.
 - B. Dhivyabharathi., Fulari, Shrikant G., Amrutsamanvar, Rushikesh., Vanajakshi, Lelitha., Subramanian, Shankar C., Panda, Manoj. (2015). "Performance Comparison of Filtering Techniques for Real Time Traffic Density Estimation under Indian Urban Traffic Scenario". Proceedings of 18th IEEE International conference on Intelligent Transportation Systems (ITSC). DOI 10.1109/ITSC.2015.238, pp 1442-1447. (Also presented at the conference).
 - (Book Chapter) Fulari, Shrikant G., Vanajakshi, Lelitha., Subramanian, Shankar C., T, Ajitha. (2015). "Application of Multi Sensor Data Fusion for Traffic Congestion Analysis" In: Fourati (ed.) Multisensor Data Fusion - From Algorithm and Architecture Design to Applications. Cat# K24384, Chapter no 33, CRC Press, Taylor & Francis Group, pp 595-610. ISBN 9781482263749.
 - Jithin Raj, Shrikant Fulari, Lelitha Vanajakshi. (2013). "Analysis of the Effect of Error in Automated Sensor Data in End Applications". The Urban Transport Research Journal, The Urban Mobility India Research Symposium, December 2013 Issue, page 65-74. (Also presented at the conference).
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CONFERENCE PRESENTATIONS:

- Abbas, Montasir., Wang, Qichao., Fulari, Shrikant G. (2017). "Guidelines on Integrated Use of Controller-Actuated Beacons with Dilemma Zone Protection Systems". Selected for presentation at the Annual Meeting of Transportation Research Board (TRB), National Research Council, Washington, D. C, January 8-12, Paper ID-17-04858.
 - Fulari, Shrikant G., Vanajakshi, Lelitha. Subramanian, Shankar C. (2016). "Artificial Neural Network Based Traffic State Estimation using Erroneous Automated Sensor Data". 4th Chinese European Workshop (CEW) on on Functional Pavement Design, TU Delft, Netherlands, June 29-July 1.
 - Fulari, Shrikant G., Vanajakshi, Lelitha. Subramanian, Shankar C. (2016). "Traffic State Estimation under Uncertain Automated Sensor Data". Presented at the Annual Meeting of Transportation Research Board (TRB), National Research Council, Washington, D. C, January 10-14.
 - Fulari, Shrikant., Raj, Vishwaksen., Desai, Rushikesh., Vanajakshi, Lelitha. (2014). "Delay Estimation on Urban Arterials Using Vehicle Based Sensor Data". Presented at Colloquium On Transportation Systems Engineering and Management CTR, CED, National Institute of Technology Calicut, India, May 10-12.
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AWARDS:

- Golden Leaf Award – 'Best M.S Student of the year 2015', for 'most outstanding all-round performance, Civil Engg. Association, July 2015, IIT Madras, India
 - Gold Medal - 'Best Student of the Batch of 2011', for most outstanding all-round performance amongst all the disciplines of bachelor of technology students, May 2011, WCE
 - 1st prize thrice, presenting technical papers and model making in various national level technical symposiums. (Participation in 11 events) (2007-2011)
 - 1st prize thrice, in non-technical innovation challenge events, Students Organization for Technical Activities (SOFTA), (2007-2011) WCE
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LEADERSHIP:

- Events coordinator, 'CEAFEST-14' and 'CEAFEST-15'- National Level Technical Fest, Dept. of Civil Engg. IIT Madras
 - President (2010-11), Asst. Campus coordinator (2009-10), SOFTA, WCE
 - Chief Co-ordinator 'AAKAR 2010' and 'VISION 2010'-National Level Technical Fests, WCE
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SPORTS:

- Player of WCE Zonal Football team (2009-11). Played twice at National level sports meet
- 1st prize thrice, Institute Annual Sports meet, WCE (2008-2011). 3rd Prize, Zonal Sports Meet, Sangli, 2011