ANJAN RAMESH BABU, Ph.D., P.E.

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SUMMARY OF QUALIFICATIONS

- Team-oriented structural engineer with hands-on experience in Finite Element Analysis (FEA), bridge design, bridge live load analysis, fatigue damage assessment & reliability analysis.
- Serving as a Handling Editor at Transportation Research Record Editorial Board.
- Conducted peer-review for scholarly journals such as Transportation Research Board and the Journal of Bridge Engineering.
- Spearheaded and collaborated in 15 bridge-related projects over 8 years for the US Army Corps of Engineers, NCHRP, and the various state department of transportation (AL, CA, CT, FL, MT, VA).
- Collaborated in NCHRP funded project related to movable bridges and developed a standalone application for processing traffic-induced damage accumulation on bridges for Alabama DOT.

EDUCATION

Ph.D. in Civil Engineering (Structural Engineering) | Auburn University, Auburn, AL *2019*

- Interests- Bridge live load analysis, reliability analysis, and bridge inspection using drones.

Master of Civil Engineering (Structural Engineering) | Auburn University, Auburn, AL *2016*

Bachelor of Engineering in Civil Engineering | Visvesvaraya Technological University, India *2013*

RELATED EXPERIENCE

Engineer, STV Inc., Richmond, VA *May 2023 – Present*

Structural Bridge Engineering Specialist, STV Inc., Richmond, VA *Aug 2022 – May 2023*

Projects involved:

- I-64 Hampton Roads Express Lanes (HREL) Segment 4C Design-Build, VDOT
- Richmond Highway Bus Rapid Transit System (RHBRT), Fairfax County DOT, VA
- Braddock Road Multimodal Improvements - Shared Used Path over Route 620, VDOT
- Fredericksburg Station Rehabilitation & Quantico Station Improvement, Virginia Railway Express, VA

Structural Engineer, PRIME AE Group, Inc., Richmond, VA *Jan 2020 – Aug 2022*

Projects involved:

- I-95 North Bound Gold Star Bridge Rehabilitation over the Thames River, ConnDOT, CT
  - The structure consists of 23 girder-floorbeam-stringer spans and 11 truss-floorbeam-stringer spans with a total length of 5,922 ft and 80 ft curb-to-curb width.
- Hampton Roads Bridge-Tunnel (HRBT) Expansion, VDOT, Hampton, VA (project's budget $3.8 billion)
  - PRIME AE's project scope included 27 span-two bound structures and two 3-span structures.
- Load Rating of Bridges for US Army Corps of Engineers, USA
- VDOT Design-Build and P3 Support Services, VDOT, VA
- US 29 Bike & Pedestrian Bridge, VDOT, VA

Postdoctoral Fellow, Civil Engineering Dept., Auburn University, Auburn, AL *Dec 2019 – April 2020*

- Involved in a project on Agricultural loads and their impact on bridges in Montana.
- Prepared grant proposals for research projects.

Graduate Research Assistant, Civil Engineering Dept., Auburn University, Auburn, AL *Mar 2015 – Dec 2019*

Projects involved at the **National level:**

- Update of AASHTO LRFD Movable Highway Bridge Design Spec. (MHBDS), NCHRP 12-112
  Collaborative effort with Modjeski & Masters (M&M) and Hardesty & Hanover (H&H)
- Truck Platooning Impacts on Bridges: Phase I – Structural Safety for FHWA

Projects involved at the **State level:**

- Application of WIM and Permit Data for Alabama DOT
- Redundancy of Twin Steel Box Girder Bridges for Florida DOT
- Impact of Heavy Trucks and Permitted OW Loads on Highways and Bridges for Florida DOT
- Agricultural Loads on Montana Bridges for Montana DOT. Collaborative effort with AECOM
- Deck Design Loads and Analysis for California DOT (Caltrans)
- Permit Load Model of a Flat Slab Bridge for Alabama DOT

Graduate Teaching Assistant, Civil Engineering Dept., Auburn University, Auburn, AL

- Course: Bridge Engineering - *Aug 2017 to Dec 2017*
- Course: Mechanics of Materials – *Aug 2016 to June 2017*
- Course: Reliability of Structures – *Jan 2016 to June 2016*

Graduate Engineer Trainee, Str. & Design Department | Vistar Constructions, India *July 2013 – July 2014*

Engineering Intern | Shilpi Engineering Consultancy, Davangere, Karnataka, India *Jan 2013 – Mar 2013*

JOURNAL PUBLICATIONS

- **Ramesh Babu, A**., O. Iatsko, A.S. Nowak, (2019) Comparison of Bridge Live Loads in US and Europe, Structural Engineering International, 29:1, 84-93, DOI:10.1080/10168664.2018.1541334
- Iatsko, O., **Ramesh Babu, A**., Stallings, J. M., & Nowak, A. S. (2020). Weigh-in-Motion-Based Fatigue Damage Assessment. Transportation Research Record, 2674(8), 710-719 DOI:10.1177/0361198120919758
- Stawska, S., Nowak, A. S., **Babu, A. R.**, Stallings, M., Newman, J., & Phillips, J. (2022). Calibration of LRFD Mechanical Design for Movable Bridges. Journal of Bridge Engineering, 27(1), 04021096
- Stawska, S., Nowak, A. S., Chmielewski, J., & **Ramesh Babu, A.** (2021). Bridge rating for vehicles with grandfather provisions. Journal of Bridge Engineering, 26(9), 04021066
- Abedin, M., Mehrabi, A. B., Azizinamini, A., Ghosn, M., Nowak, A. S., & **Babu, A. R.** (2022). Reliability evaluation of twin steel box girder bridges using a simplified method. Engineering Structures, 259, 114122

CONFERENCE PROCEEDINGS

- **Ramesh Babu, A**., Stawska S., and Nowak, A. S. (2020). "WIM-Based Bridge Live Load Model for Florida" Washington, DC 20001, Paper Number: 20-01842. Presented at the 99th Annual Meeting of the Transportation Research Board
- **Ramesh Babu, A**., Iatsko, O., Nowak, A. S., and Stallings, J. M. (2019). "Improving Quality of WIM Traffic Data." Washington, DC 20001, Paper Number: 19-01057. Presented at the 98th Annual Meeting of the Transportation Research Board
- **Ramesh Babu, A.**, Nowak, A. S., & O'Brien, E. J. (2018). Bridge Live Load Models in US and Europe. In Ninth International Conference on Bridge Maintenance, Safety and Management (IABMAS 2018), Melbourne, Australia. CRC Press, Taylor and Francis Group
- Iatsko, O., **Ramesh Babu, A**., & Nowak, A. S. (2019). *WIM-based Live Load Models for Highway Bridge*, American Concrete Institute (Spring 2019) The Concrete Convention and Exposition., Quebec City, Quebec, Canada
- Iatsko, O., **Ramesh Babu, A**., & Nowak, A. S. (2018). *WIM-Based Fatigue Load Spectra for Bridges*, American Concrete Institute (Fall 2018) The Concrete Convention and Exposition., Las Vegas, Nevada

- Abedin, M., Mehrabi, A. B., Azizinamini, A., Ghosn, M., Nowak, A. S., & **Babu, A. R.** (2022, June). Redundancy evaluation of twin steel box girder bridges. In Bridge Safety, Maintenance, Management, Life-Cycle, Resilience and Sustainability: Proceedings of the Eleventh International Conference on Bridge Maintenance, Safety and Management (IABMAS 2022), Barcelona, Spain, July 11-15, 2022 (p. 83). CRC Press
- Nowak, A. S., **Ramesh Babu, A.**, & Stawska, S. (2019). What to do with massive truck traffic data? Scientific Conference of the Committee for Civil Engineering of the Polish Academy of Sciences and the Science Committee of PZITB, ISBN: 978-83-01-20835-6
- O. Iatsko, A.S. Nowak and **Ramesh Babu, A**. (2017) *Load Effects Caused by Permit and Illegally Overloaded Vehicles*, XXVIII conference on structural failures – Poland

INTERNATIONAL CONFERENCE PRESENTATIONS

- **Ramesh Babu, A.**, Nowak, A. S., & O'Brien, E. J. (2018). Bridge Live Load Models in US and Europe. In Ninth International Conference on Bridge Maintenance, Safety and Management (IABMAS 2018), Melbourne, Australia. CRC Press, Taylor and Francis Group
- Iatsko, O., **Ramesh Babu, A**., & Nowak, A. S. (2019). *WIM-based Live Load Models for Highway Bridge*, American Concrete Institute (Spring 2019) The Concrete Convention and Exposition., Quebec City, Quebec, Canada
- Nowak, A. S., **Ramesh Babu, A.**, & Stawska, S. (2019). What to do with massive truck traffic data? Scientific Conference of the Committee for Civil Engineering of the Polish Academy of Sciences and the Science Committee of PZITB, ISBN: 978-83-01-20835-6

TECHNICAL SKILLS

Structural Analysis and design software: LARSA 4D, LEAP Bridge Concrete, FB-MultiPier, SAP 2000, CSi Bridge, AutoCAD, MDX, and Microstation.
Computational and programming software: Mathcad, Matlab, Tableau and iAnalyze

CERTIFIED LICENSE

- Professional Engineer (PE) from Virginia DPOR - #0402066279
- Engineer-in-Training (EIT) from Virginia DPOR - #0420073764
- FAA Part 107 - Pilot in Command (UAV/ Drone) – Currently expired

LEADERSHIP EXPERIENCE AND INVOLVEMENT

- Handling Editor, Transportation Research Record Editorial Board, The National Academies of Sciences, Engineering, and Medicine **|** 2023 – Present
  - Solicit reviewers with suitable expertise to evaluate the submissions assigned to me and ultimately decide on publication.
  - Responsible for evaluating the reviewer's comments, assessing the relevance and suitability of the manuscript, and providing a timely decision to the author.
- Peer-reviewer for scholarly journals such as Transportation Research Board and the Journal of Bridge Engineering **|** 2019 – Present
- Vice-president, American Concrete Institute Student Chapter at Auburn University **|** 2018 –2019
- Professional memberships at the American Concrete Institute (ACI) and American Council of Engineering Companies (ACEC)
- Forum Secretary, Civil Engineering Forum, VTU **|** 2011- 2013