

Bokkisa Srinivas Vivek

PhD Student
School of Civil and Environmental Engineering
Georgia Institute of Technology, Atlanta, GA

+1(470)3058546
svbokkisa3@gatech.edu
[Linkedin](#) | [Scholar](#) | [ResearchGate](#)

EDUCATION

Degree	University	Year	GPA
PhD in Civil Engineering	Georgia Institute of Technology	2024	4/4
M.Phil. in Civil Engineering (Concentration in Scientific Computation)	Hong Kong University of Science and Technology	2019	4.15/4.30
B.Tech. in Civil Engineering	Indian Institute of Technology, Guwahati	2017	8.44/10

RESEARCH INTERESTS AND OBJECTIVE

My major study area is in the field of **Geotechnical Earthquake Engineering** with a particular research interest in **Soil Liquefaction phenomenon**. In the last two years, I have developed keen interest in **Computational Geomechanics** and gained hands-on-experience with **Discrete Element Modelling** of granular materials. I am very enthusiastic to explore the domains of **Granular Mechanics** and **Modeling of Geohazards** in my PhD at Georgia Institute of Technology.

PUBLICATIONS

- Kumar, A., **Srinivas, B. V.** (2017). Easy to use empirical correlations for liquefaction and no liquefaction conditions. *Geotechnical and Geological Engineering*, 35(4), 1383-1407. [\[PDF\]](#)
- **Srinivas Vivek, B.**, Wang, G., Duruo, H. and Feng, J. (2019). Fabric evolution in post-liquefaction and re-liquefaction of granular soils using 3D discrete element modeling. In *Proceedings of the 7th International Conference on Earthquake Geotechnical Engineering (ICEGE 2019)*, ISBN: 978-0-367-14328-2, vol. 4, pp. 1461-1468. CRC Press. [\[PDF\]](#)
- **Srinivas Vivek, B.**, and Wang, G. (2019). DEM Modelling of Toyoura sand considering real particle shapes, *The 23rd Annual Conference of HKSTAM 2019 in conjunction with The 15th Jiangsu-Hong Kong Forum on Mechanics and its Application*, April 13, 2019, Hong Kong, p. 41, HKSTAM [\[PDF\]](#)
- **Srinivas Vivek, B.**, and Mohanty, S. (2016). 1D Ground Response Analysis of Bhubaneswar Soil in India. *6th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics*, 2016, New Delhi, India [\[PDF\]](#)

RESEARCH PROJECTS

- **Discrete Element Modelling of Toyoura Sand using Realistic Particle Shapes**
(*Research Project, Supervisor: Dr Gang Wang, Associate Professor, HKUST, Hong Kong*
Collaborator: Prof. Takashi Matsushima, University of Tsukuba, Japan) **Mar'19- Aug '20**
 - Modelled the realistic behavior of Toyoura sand using 3D Discrete Element Modelling (3D-DEM) by considering the real particle shapes using multi-sphere approximation method.
 - Parametrically analyzed various micro-parameters that effect the macroscopic soil behavior and proposed a systematic calibration procedure in DEM. (for more [details](#))
- **Fabric Evolution in 3D Discrete Element Modelling of Soil Liquefaction**
(*M.Phil. Thesis, Supervisor: Dr Gang Wang, Associate Professor, HKUST, Hong Kong*) **Jan'18 - Aug'19**
 - Proposed new void-based fabric descriptors and a fabric tensor to quantify void space in a granular packing using Minkowski tensor analysis on the normalised Voronoi tessellation space.
 - Developed a parallel code to compute the Minkowski tensors which reduced the computation time significantly when using numerous particles in a granular packing. (for more [details](#))
- **Easy to use empirical correlations for liquefaction and no liquefaction conditions**
(*B.Tech. Thesis, Supervisor: Dr Abhishek Kumar Sharma, Associate Professor, IITG, India*) **Aug'15 - Jan'17**
 - Statistically analysed the effect of various parameters to compute the liquefaction potential of a site.
 - Proposed new empirical correlations in accordance with the widely accepted methodology and are formulated in a lucid manner for the designers and the site engineers to employ. (for more [details](#))
- **1D Ground Response Analysis of Bhubaneswar Soil**
(*Research Intern Project, Guide: Dr Supriya Mohanty, Assistant Professor, IITM, India*) **May'15- July'15**
 - Amplification characteristics of a site are studied using 1D ground response analysis of several soil columns by SHAKE 2000 (Equivalent-linear) and Cyclic1D (Non-linear)
 - Carried out liquefaction studies on the borehole data using simplified Seed and Idriss method. (for more [details](#))

CONFERENCES, WORKSHOPS AND SUMMER SCHOOLS

- Participated in the workshop on Emerging Scales in Granular Media , Jan 14-16, 2020, Hong Kong
- Presented a research paper at the 7th International Conference on Earthquake Geotechnical Engineering, Rome, Italy, 2019
- Participated in the 23rd Annual Conference of HKSTAM 2019 in conjunction with The 15th Jiangsu-Hong Kong Forum on Mechanics and its Application, April 13, 2019, Hong Kong
- Attended the APRU-IRIDeS Multi-Hazards Summer School at Tohoku University, Sendai, Japan, 2018
- Presented a research paper at the 6th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, New Delhi, India, 2016

RELEVANT COURSEWORK

Geotechnical Earthquake Engineering	Finite Element Methods
Advanced Soil Mechanics	Ordinary and Partial Differential Equation
Theoretical and Computational Soil mechanics	Engineering Mathematics
Fundamentals of Continuum Mechanics	Introduction to Advanced Computing Systems

TEACHING AND LEADERSHIP ROLES

- **Graduate Teaching Assistant, Department of Civil Engineering, HKUST** *Feb'18- May'19*
Served as a TA for the courses - Rock Mechanics (Spring'18 &'19) and Construction Materials (Fall'18)
Responsibilities involved teaching tutorials, demonstrating laboratory sessions and grading papers
- **General Secretary of Academics, Association of Civil Engineers, IITG** *Oct'15- Oct'16*
Organised department level seminars by inviting professors from other renowned universities.
Arranged frequent sessions between faculty and students to bridge the increasing gap.
- **Student Academic Mentor, Association of Civil Engineers & Welfare Board, IITG** *Aug'16- Apr'16*
Mentored 6 freshmen through out a year both in academic as well as personal grounds.
- **Captain of Institute's Volleyball team, IITG** *Jan'16- Jan'17*
Led a team of young players in different inter-university volleyball tournaments
Provided constant motivation, developed strategic planning and ensured team synergy
- **Public Relations and Branding Executive at Techniche'15, Annual Tech Fest of IITG** *Oct'14- Sept'15*
Publicized events of the technical festival through presentations, workshops and initiatives.

ACHIEVEMENTS

- Recipient of Postgraduate Student Scholarship for master's study at HKUST (2017–2019)
- One amongst the 23 globally selected invitees who visited HKUST for the HKUST Future Civil Fellowship and Study Tour for Elite Students program in 2016.
- Secured an All India Rank (AIR) of 3858, in IIT JEE Mains Examination, wherein about 1.5 million students appeared and an AIR 3567, in IIT JEE Advanced Examination where in about 100 thousand students appeared.

EXTRA-CURRICULARS

- Represented HKUST men's Cricket team in the University Challenge League, inter-university tournament, organised by Cricket, Hong Kong (2018 and 2019).
- Represented IITG men's Volleyball team in Inter-IIT sports meets, national level inter-university competition, held at IIT-Bombay (2015) and IIT-Kanpur (2017).

TECHNICAL SKILLS

- **Open Source Programs:** YADE, LIGGGHTS, Voro++, Karambola
- **Ground Response Analysis Programs:** SHAKE2000, Cyclic1D
- **Programming Languages:** Python, C++
- **Other programs:** MatLab, Microsoft Office, AutoCAD
- **Operating Systems:** Linux, Windows