

EDUCATION AND TRAINING

- **Iowa State University** Ames, IA
Postdoctoral Research Associate; Department of Agronomy Nov. 2018 - Oct. 2019
- **Iowa State University** Ames, IA
Postdoctoral Research Associate; Mechanical Engineering Department Sep. 2013 - Nov. 2018
- **University of Illinois at Urbana-Champaign** Urbana, IL
Postdoctoral Research Associate; Mechanical and Industrial Engineering Department Aug. 2012 - Sep. 2013
- **Washington State University** Pullman, WA
Ph.D. in Mechanical Engineering; GPA: 3.93 Jan. 2007 - July. 2012
- **Bangladesh University of Engineering and Technology** Dhaka, Bangladesh
M.S. in Mechanical Engineering; GPA: 3.25 Sep. 2001 - Aug. 2005
- **Bangladesh University of Engineering and Technology** Dhaka, Bangladesh
B.S. in Mechanical Engineering; GPA: 3.75 May. 1996 - Aug. 2001

EMPLOYMENT

- **Iowa State University** Ames, IA
Research Scientist; Translational AI Center Nov. 2022 - Present
- **Iowa State University** Ames, IA
Assistant Scientist; Department of Mechanical Engineering Oct. 2019 - Nov. 2022
- **Iowa State University** Ames, IA
Postdoctoral Research Associate; Department of Agronomy Nov. 2018 - Oct. 2019
- **Iowa State University** Ames, IA
Postdoctoral Research Associate; Mechanical Engineering Department Sep. 2013 - Nov. 2018
- **University of Illinois at Urbana-Champaign** Urbana, IL
Postdoctoral Research Associate; Mechanical and Industrial Engineering Department Aug. 2012 - Sep. 2013
- **Washington State University** Pullman, WA
Instructor May. 2012 - July. 2012
- **Washington State University** Pullman, WA
Teaching Assistant Jan. 2010 - Apr. 2012
- **Washington State University** Pullman, WA
Research Assistant Jan. 2007 - Dec. 2009
- **Bangladesh University of Engineering and Technology** Dhaka, Bangladesh
Assistant Professor Sep. 2001 - Aug. 2005
- **Bangladesh University of Engineering and Technology** Dhaka, Bangladesh
Lecturer May. 1996 - Aug. 2001
- **Prime Asia University** Dhaka, Bangladesh
Adjunct Assistant Professor May. 1996 - Aug. 2001

RESEARCH EXPERIENCE

- **Iowa State University**

Ames,IA

Oct 2019 - Present

Assistant Scientist

- **Multimodal data fusion to improve soybean wilting score:** Guided students in developing deep learning framework with self supervised pre-training for soybean wilting score, Publications: Ayanlade et al. (in preparation) In collaboration with A.K. Singh, A. Singh, S.Sarkar, B. Ganapathysubramanian
- **Maize Kernel Classification and Segmentation for Embryo Identification:** Developed data capturing protocol for high throughput seed sorter, developed initial deep learning models for embryo identification, Publications: Dong et al. 2023 (Under review in Frontiers in plant science) In collaboration with T. Lbberstedt, B. Ganapathysubramanian
- **AutoSiQ: Automated Silique Quantifier:** Developed deep learning framework to quantify siliques fertility rate from plant images. Publications: Jubery et al.(Under preparation) In collaboration with T. Lbberstedt, B. Ganapathysubramanian
- **Conditional and Compositional Autoencoder:** Developed deep learning framework to generate better latent traits from plant images/ reflectance spectrum by conditioning with additional sub-task, and by decomposing the latent traits based on existing hierarchical structure in the data. Publications: Jubery et al.(Under preparation) In collaboration with J. Schnable, B. Ganapathysubramanian
- **Generate faithful 3D model of thousands field grown maize plants:** Developed highthroughput indoor scanning platform for field grown maize plant. Publications: Prasad et al. 2021 (AI for Agriculture and Food Systems) In collaboration with A. Krishnamurthy, S.Sarkar, B. Ganapathysubramanian
- **3D point cloud data for improved plant phenotyping:** Designed, assembled Terrestrial Laser Scanning platform for crop canopy phenotyping, Guided students to develop point cloud processing algorithm, Guided students to develop machine learning and deep learning models to measure plant traits. Publications: Chiranjeevi et al.2021 (AI for Agriculture and Food Systems) In collaboration with A.K. Singh, A. Singh, S.Sarkar, B. Ganapathysubramanian
- **Canopy Trait Extraction Pipeline for Mungbean:** Guided student in developing an imaging platform to capture leaf images of field grown mungbean, developed leaf annotation software and guided student in developing image processing algorithm to extract leaf traits. Publications: Chiteri et al.2023 (under view in The Plant Phenome Journal) In collaboration with A.K. Singh, A. Singh, S.Sarkar, B. Ganapathysubramanian
- **Root Trait Extraction Pipeline for Mungbean:** Developed deep learning model to identify primary root and added the model to the in-house root phenotyping software ARIA. Publications: Chiteri et al.2022 (Frontiers in plant science) In collaboration with A.K. Singh, A. Singh, S.Sarkar, B. Ganapathysubramanian
- **SNAP : Soybean Nodule Acquisition Pipeline:** Developed a deep learning based framework for automatic detection of soybean nodules on digital RGB images. Publications: Jubery et al.2021 (Plant Phenomics) In collaboration with A.K. Singh, A. Singh, S.Sarkar, B. Ganapathysubramanian
- **High throughput phenotyping of maize tassel :** Developed highthroughput imaging platform for thousands field grown maize tassels. Publications: Zhou et al. 2021 (The Plant Cell) In collaboration with P., Schnable, Y. Qiu, D. Nettelton, B. Ganapathysubramanian
- **Temporal Trait Extraction from RGB images captured in natural in-field condition:** Developed a deep learning pipeline to segment individual rows of plants from the background plants and extract traits including plant height, leaf angle, stalk height, stalk angle. Publications: Jubery et al.(Under preparation) In collaboration with P., Schnable, Y. Qiu, D. Nettelton, B. Ganapathysubramanian

- **Iowa State University**

Ames,IA

Oct 2013 - Oct 2019

Postdoctoral Researcher

- **Identification of ideal crop (ideotypes) for water-constraint environments by integrating optimization with physiological model:** Developed a mechanistic crop model. Developed optimization framework with high-performance computing to identify climate and site-specific crop varieties. Publications: Jubery et al. 2019 (Food and Energy Security) In collaboration with M. Gilbert (UC Davis), D. Attinger, B. Ganapathysubramanian

- **Implementation of stochastic optimization principles to identify precision management practices to maximize expected profit:** Developed model to capture the effect of size and shape of a land block as well as special irrigation patterns in maximizing net profit. Publications: Li et al. 2017 (PLOS One) In collaboration with G. Liu
- **Early discrimination of haploid by designing and developing reusable, cheap, scalable platform:** Developed a scalable reusable framework for early discrimination of maize haploid. Implemented Bayesian optimization along with supervised machine learning algorithm to develop haploid classifier. Publications: Vanous et al. 2019 (accepted- The Plant Phenome Journal). In collaboration with T. Lubberstedt, B. Ganapathysubramanian
- **Deploying Fourier coefficients for rigorous quantification soybean canopy morphometric traits :** Construction of geometric measure of soybean canopy from digital images. Utilized various statistical methods including dimensionality reduction and clustering to identify patterns in canopy outline. Publications: Jubery et al. 2017 (Frontier in Plant Science) In collaboration with A. Singh, B. Ganapathysubramanian
- **Design and development of transparent pressure chamber and microfluidic sensor for quantification of maize root plasticity under water stress:** Designed and fabricated an experimental tool to measure root hydraulic conductance. Investigated root traits of two maize genotypes under well-watered and simulated drought conditions. Publications: Jubery et al. 2019 (under review) In collaboration with D. Attinger, T. Lubberstedt, B. Ganapathysubramanian
- **Investigation of water collection mechanism on maize leaves with different wettability:** Developed experimental tool based on thermoelectric cooling, controllable environmental chamber, and scanning electron microscopy to observe condensation of water on the leaf. Investigated condensation and water harvesting on the leaves of maize genotypes with different wettability. Conference Presentation: Jubery et al. 2016 (ICNNM). In collaboration with D. Attinger, N. Lauter, B. Ganapathysubramanian
- **Development of deep learning pipeline for oil content identification of maize kernel using NIR and NMR imaging and chemometrics:** Developed and trained a machine learning model for automatic quantification of oil content. In collaboration with T. Lubberstedt, B. Ganapathysubramanian, Gardner, C. USDA
- **Infra-red thermography and hyperspectral NIR imaging to identify crop status under drought:** Evaluated stomatal conductance of crop seedlings with infra-red thermography. Developing experimental tool for early disease detection in soybean via hyper-spectral imaging of root. In collaboration with A. Singh, A. Singh, B. Ganapathysubramanian
- **ARIA2: Automatic root image analysis next generation:** Developed Machine learning and Graph theory-based software including image segmentation, creative trait extraction algorithm, and data analytic for the roots of monocot, dicot crops at seedlings and mature stages. Publications: Zheng et al. 2019 (under review). In collaboration with P. Schnable, B. Ganapathysubramanian
- **Development, construction, deployment of a comprehensive framework high-throughput 3D image-based holistic and component phenotyping platform for maize shoot and tassel:** Designed and fabricated deployment frameworks, 3-D point cloud acquisition protocols with for Terrestrial Laser Scanner in maize field; developed algorithms for statistical noise removal, skeletonization, 3D trait extraction from the point cloud. In collaboration with P. Schnable, B. Ganapathysubramanian
- **Crowdsourcing platform and Computer vision assisted protocol development for temporal height acquisition of in-field maize plants :** In collaboration with P. Schnable, B. Ganapathysubramanian
- **Blood Rheology in Shear and Uniaxial Elongation:** : In this collaborative project, I contributed in shear flow related rheology study. Publications: Kolbasov et al. 2017 (Rheologica Acta) In collaboration with D. Attinger, A. Yarin (UIC), B. Ganapathysubramanian

• **University of Illinois at Urbana-Champaign**

Postdoctoral Researcher

Urbana, IL

Aug 2012 - Sep 2013

- **Study and analysis of metalworking fluid microfiltration for sustainable manufacturing:** Developed multi-particle modeling of microemulsions transport through rough and tortuous membrane pore of microfilter. Developed mathematical model to capture particle pore wall collision and particle agglomeration. Introduced a fast algorithm for solving forces acting on the particles. Proposed a hybrid microfilter for sustainable manufacturing process. Proposed the requirement of surface charge density optimization to reduce fouling and native oil particles depletion. Submitted a proposal to NSF for funding, based on hybrid microfilter concept Publications: Jubery et

al. 2017 (Journal of Manu Sci and Engineering), Jubery et al. 2015 (Journal of Manu Sci and Engineering) In collaboration with S. Kapoor (University of Illinois at Urbana-Champaign), J. Wentz (University of St. Thomas)

• Washington State University

Pullamn, WA

Research Assistant

Jan 2007- Jul 2012

- **Bioparticle separation via dielectrophoresis:** Developed in-house fictitious domain based code for dielectrophoretic transport of fluids with suspended micro particles in microchannel. Achieved at least 10 times reduction in computational time in the simulation of dielectrophoretic particle manipulation. Designed a new microdevice and electrodes for efficient separation of infected and uninfected cells. Publications: Jubery et al. 2014 (Electrophoresis), Jubery et al. 2013 (Numerical Heat Transfer Part a-Applications), Jubery et al. 2013 (Electrophoresis)
- **Sensors for cardiac arrest detection :** Design, fabricate and operate a miniature microfluidic device for isotachophoric (ITP) preconcentration to develop a fully integrated portable device for point-of-care diagnostics in a collaborative research. Achieved 10,000 fold concentration gain on human cardiac protein cTnI. Developed innovative techniques and protocols for 1D, 2D step changed and hybrid microfluidic devices with two pending patents. Developed outstanding expertise on microfabrication techniques and processes such as photolithography, sputtering, etching, solvent/plasma/plasma-assisted thermal bonding. Publications: Bottenus et al. 2011 (Lab on a Chip), Bottenus et al. 2011 (Electrophoresis) In collaboration with P. Dutta, C. Ivory, W. Dong (Washington State University)
- **Design, fabricate and operate a miniature microfluidic device for protein separation by isoelectric focusing coupled with isotachophoresis:** Developed Fabricated mechanically controlled valve to control flow rate through a microchannel. Explored different fabrication techniques of PMMA microchips. Supervised and trained incoming graduate students on microfabrication techniques, protocols, and processes in clean room. Publications: Jubery et al. 2012 (Biomicrofluidics) In collaboration with P. Dutta, C. Ivory, W. Dong (Washington State University)
- **Nano Device to filter out bad cholesterol:** Developed a simulation tool to track the nanoparticle trajectories through a charged solid-state nanopore using COMSOL Multiphysics with MATLAB. Designed a microfluidic platform for efficient separation of High-density lipoprotein (HDL) and low-density lipoprotein (LDL). Publications: Jubery et al. 2012 (Electrophoresis), Prabhu et al. (Journal of Physics Condensed Matter) In collaboration with P. Dutta (Washington State University), M. Kim (Drexel University)

• Bangladesh University of Engineering and Technology

Dhaka, Bangladesh

Student Researcher

2001- 2005

- **Supersonic mixing:** Modeling and simulation of the mixing of supersonic jets with different merging angles. Publications: Ali et al. 2009 (ICME), Ali et al. 2015 (Procedia Engineering) In collaboration with M. Ali, S. Islam, Q. Islam (BUET)
- **Low Reynolds number mixing:** Study of Mean velocity and flow direction in the mixing zone of two non-axial air streams. Publications: Ali et al. 2001 (ICME) In collaboration with M. Ali (BUET)

SOFTWARE DEVELOPMENT

- **Crop Science Related:** ARIA, ARIA2, SNAP, COFE, AutoSiQ

TEACHING AND MENTORING

- **Courses:**

- 2022 Instructor, Predictive Plant Phenomics. (ISU)
- 2020 Guest Lecturer, Principles of Cultivar Development (ISU)
- 2019 Instructor, Predictive Plant Phenomics. (ISU)
- 2016 Instructor, Predictive Plant Phenomics. (ISU)
- 2018 Big Data Symposium (ISU)
- 2012 Instructor, Computer Aided Design. (WSU)
- 2010 Guest Lecturer, Thermal System Design. (WSU)

- 2006-07 Instructor, Thermodynamics, Solid mechanics, Fluid Mechanics. (BUET)

- **Graduate Student Mentoring:**

- Arpa Gosh (Iowa State University)
- Vahid Mirnezami (Iowa State University)
- Therin Young (Iowa State University)
- Anirudha Powadi (Iowa State University)
- Timilehin Ayanlade (Iowa State University)
- Ashton Archer (Iowa State University)

- **Undergraduate Student Mentoring:**

- Ankush Algudkar (Iowa State University)
- Shawn Castelino (Iowa State University)
- Robert Termuhlen (Iowa State University)
- Sam Lam (Iowa State University)
- Amara Greer-Short (Washington State University)

PEER-REVIEWED PUBLICATIONS

- Chiteri, K. O., Jubery, T. Z., Dutta, S., Ganapathysubramanian, B., Cannon, S., Singh, A. (2022). Dissecting the root phenotypic and genotypic variability of the Iowa mung bean diversity panel. *Frontiers in Plant Science*, 12, 808001.
- Chiteri, K., Chiranjeevi, S., Jubery, T. Z., Rairdin, A., Ganapathysubramanian, B., Singh, A. (2022). NAPPN Annual Conference Abstract: Combining Image Analysis and GWAS to Dissect the Genetic Architecture of Mung Bean Leaf Morphology Traits.
- Dong, D., Nagasubramanian, K., Wang, R., Frei, U. K., Jubery, T. Z., Lbberstedt, T., Ganapathysubramanian, B. (2022). Self-Supervised Maize Kernel Classification and Segmentation for Embryo Identification. *BioRxiv*.
- Aboobucker, S. I., Jubery, T. Z., Frei, U. K., Chen, Y.-R., Foster, T., Ganapathysubramanian, B., Lbberstedt, T. (2022). Protocols for In Vivo Doubled Haploid (DH) Technology in Maize Breeding: From Haploid Inducer Development to Haploid Genome Doubling. In *Plant Gametogenesis* (pp. 213235). Humana, New York, NY.
- Jubery, T. Z., Carley, C. N., Singh, A., Sarkar, S., Ganapathysubramanian, B., Singh, A. K. (2021). Using Machine Learning to Develop a Fully Automated Soybean Nodule Acquisition Pipeline (SNAP). *Plant Phenomics*, 2021.
- Nagasubramanian, K., Jubery, T. Z., Ardakani, F. F., Mirnezami, S. V., Singh, A. K., Singh, A., Ganapathysubramanian, B. (2021). How useful is active learning for image-based plant phenotyping? *The Plant Phenome Journal*.
- Zhou, Y., Kusmec, A., Mirnezami, S. V., Attigala, L., Srinivasan, S., Jubery, T. Z., Schnable, P. S. (2021). Identification and utilization of genetic determinants of trait measurement errors in image-based, high-throughput phenotyping. *The Plant Cell*, 33(8), 25622582.
- Moothedath, S., Lee, X. Y., Jubery, T., Ganapathysubramanian, B., Sarkar, S. (2021). A Conservative Stochastic Contextual Bandit Based Framework for Farming Recommender Systems. *AI for Agriculture and Food Systems*.

- Prasad, A. D., Jignasu, A., Jubery, Z., Sarkar, S., Ganapathysubramanian, B., Balu, A., Krishnamurthy, A. (2021). Deep implicit surface reconstruction of 3D plant geometry from point cloud. *AI for Agriculture and Food Systems*.
- Chiranjeevi, S., Young, T., Jubery, T. Z., Nagasubramanian, K., Sarkar, S., Singh, A. K., Ganapathysubramanian, B. (2021). Exploring the use of 3D point cloud data for improved plant stress rating. *AI for Agriculture and Food Systems*.
- Jubery, T.Z., Ganapathysubramanian, B., Gilbert, M., Attinger, D., In silico design of crop ideotypes under a wide range of water availability, 2019, *Food and Energy Security*.
- Falk, K. G., Jubery, T. Z., ORourke, J. A., Singh, A., Sarkar, S., Ganapathysubramanian, B., Singh, A. K., "Soybean Root System Architecture Trait Study through Genotypic, Phenotypic, and Shape-Based Clusters", 2020, *Plant Phenomics*.
- Jubery, T.Z., Vanous Kimberly, Ganapathysubramanian, B., Lubberstedt, T, Utilization of reduced vigor for phenomic discrimination of haploid and diploid maize seedlings, 2019, *The Plant Phenome Journal*.
- Zheng, Z., Hey, S., Jubery, T.Z., Ganapathysubramanian, B., Schnable, P., Shared genetic control of root system architecture between *Zea mays* and *Sorghum bicolor*, 2020, *Plant Physiology*.
- Falk, Kevin, Jubery, T.Z., Ganapathysubramanian, B., Singh, Asheesh, Computer Vision and Machine Learning Enabled Soybean Root Phenotyping Pipeline, 2020, *Plant Methods*.
- Li, Q., Hu, G., Jubery, T. Z., Ganapathysubramanian, B., A farm-level precision land management framework based on integer programming. 2017, *PloS one*.
- Jubery, T.Z., Shook, J., ... ,Singh, Asheesh "Deploying Fourier coefficients to unravel soybean canopy diversity. 2016, *Frontiers in Plant Science*.
- Kolbasov, Alexander, Patrick M. Comiskey, Jubery, T.Z., Daniel Attinger. "Blood rheology in shear and uniaxial elongation." *Rheologica Acta* 55, no. 11-12 (2016): 901-908.
- Jubery, T. Z., Shiv G. Kapoor, and John E. Wentz. "A Study on Native Oil Components Depletion of Industrial Metalworking Fluid During Microfiltration." *Journal of Manufacturing Science and Engineering* 138.3 (2016): 031002.
- Ali, M., Jubery, T.Z., Amin, S., Islam, M. Q. (2015). Physics of Supersonic Mixing in Parallel and Non-Parallel Streams Passing Over Base Thickness. *Procedia Engineering*, 105, 294-301.
- Jubery, T.Z., Soumya K. Srivastava, Dutta, P., "Dielectrophoretic separation of bioparticles in microdevices: A review." *Electrophoresis* 35.5 (2014): 691-713.
- Jubery, T. Z., Shiv G. Kapoor, and John E. Wentz. "Effect of Interparticle Interaction on Particle Deposition in a Crossflow Microfilter." *Journal of Manufacturing Science and Engineering* 137.1 (2015): 011001.
- Jubery, T. Z., and Dutta, P., 2013, "A Fast Algorithm to Predict Trajectory of Biological Entities during Manipulation via Dielectrophoresis in a Microdevice," *Numerical Heat Transfer Part a-Applications*, 64(2), pp. 107-131.
- Jubery, T. Z., and Dutta, P., 2013, "A New Design for Efficient Dielectrophoretic Separation of Cells in a Microdevice," *Electrophoresis*, 34(5), pp. 643-650.
- Jubery, T. Z., Hossan, M. R., Bottenus, D., Dong, W., Ivory, C. F., and Dutta, P., 2012, "A New Fabrication Technique to form Complex PMMA Microchannel for Bioseparation," *Biomicrofluidics* 6, 016503.
- Jubery, T. Z., Prabhu, A. S., Kim, M. J., and Dutta, P., 2012, "Modeling and Simulation of Nanoparticle Separation in a Solid State Nanopore," *Electrophoresis*, 33(2), pp. 325-333.

- Bottenus, D., Jubery, T. Z., Dutta, P., and Ivory, C. F., 2011, "10 000-fold Concentration Increase in Proteins in a Cascade Microchip Using Anionic ITP by a 3-D Numerical Simulation with Experimental Results," *Electrophoresis*, 32(5), pp. 550-562.
- Bottenus, D., Jubery, T. Z., Ouyang, Y. X., Dong, W. J., Dutta, P., and Ivory, C. F., 2011, "10 000-fold Concentration Increase of the Biomarker Cardiac Troponin I in a Reducing Union Microfluidic Chip Using Cationic Isotachophoresis," *Lab on a Chip*, 11(5), pp. 890-898.
- Prabhu, A. S., Jubery, T. Z., Freedman, K. J., Mulero, R., Dutta, P., and Kim, M. J., 2010, "Chemically Modified Solid-State Nanopores for High Throughput Nanoparticle Separation," *Journal of Physics-Condensed Matter*, 22, 454107(45).

BOOK CHAPTER

- Singh, A. K., Singh, A., Sarkar, S., Ganapathysubramanian, B., Schapaugh, W., Miguez, F. E., Others. (2021). High-Throughput Phenotyping in Soybean. In *High-Throughput Crop Phenotyping* (pp. 129163). Springer, Cham.
- Dutta, P., Horiuchi, K., and Jubery, T. Z., 2007, "Microfluidic Circuits," *Encyclopedia of Microfluidics and Nanofluidics*, L. Dongqing, ed., Springer, Germany.

CONFERENCE PROCEEDINGS/PRESENTATIONS

- Parmley, K., Chawla, Vikas, Jubery, T.Z., Singh, A.K., Customizing Soybean Cultivar Development Through Aerial and Ground Phenotyping 2017, Plant Breeding Symposium, Ames, Iowa.
- Kevin Falk, Jubery, T.Z., Singh, A. K., Studies of Root System Architecture in Soybean using Computer Vision and Machine Learning, 4th international plant Phenotyping symposium, 2016, Mexico City, Mexico.
- Vanous Kimberly, Jubery, T.Z., Ganapathysubramanian, B., Lubberstedt, T, Early Discrimination of Haploids in Maize (*Zea mays* L.), 2016, Plant Breeding Symposium, Ames, Iowa.
- Jubery, T., Algudkar, A., Lauter, N., Attinger, D., How can surface morphology and wettability of leaves influence water harvesting? D., HT/FE/ICNMM conference ASME, 2016.
- Jubery, T.Z., Liu, S., Lubberstedt, T., Ganapathysubramanian, B., Attinger, D., Development of a microfluidic flow sensor to measure maize root plasticity under drought HT/FE/ICNMM conference ASME, 2016.
- Jubery, T.Z., Ganapathysubramanian, B., Lubberstedt, T., and Attinger, D., Measurement of Root Conductance Compatible with X-ray Visualization, Poster Presentation in International Workshop on Engineered Crops, April, 2014.
- Ali, M., Jubery, Jubery, T.Z., Amin, S., Islam, M. Q. (2015). Physics of Supersonic Mixing in Parallel and Non-Parallel Streams Passing Over Base Thickness. *Procedia Engineering*, 105, 294-301.
- Jubery, T.Z., Kapoor, S.G., Wentz, J. E., Effect of Inter-particle Interaction on Particle Deposition in a Cross-Flow Microfilter" *Proceedings of ASME International Manufacturing Science and Engineering Conference* 2013.
- Ali, M., Islam, M. Q., Jubery, T.Z., Amin, S. (2013). Numerical simulation of supersonic mixing layers for parallel and non-parallel streams. *Procedia Engineering*, 56, 187-192.
- Bottenus, D., Jubery, T. Z., Dutta, P., and Ivory, C. F., 2010, "Preconcentration Power of Isotachophoresis and the Detection of Cardiac Troponin I in a Microchip," , Graduate Research Symposium, Pullman, WA.
- Jubery, T. Z., Prabhu, A. S., Kim, M. J., and Dutta, P., "Modeling and Simulation of Translocation Phenomenon in a Solid-State Nanopore for Nanoparticle Separation," *Proceedings of ASME International Mechanical Engineering Congress and Exposition* 2010.

- Hossan, M. R., Jubery, T. Z., Bottenus, D., Dong, W., Dutta, P., and Ivory, C. F., "Preconcentration of Cardiac Proteins in a Cascade Microchip," Proceedings of ASME International Mechanical Engineering Congress and Exposition 2011.
- Harwood, R. C., Zhang, L. K., Jubery, T. Z., Vogel, G. M., Munge, W. G., Theisen, J. J., and Manoranjan, V. S., "Oscillation-Free Operator Splitting Method for Semilinear Diffusion Equations," Joint Mathematics Meetings 2011.
- Dutta, P., Jubery, T. Z., and Kim, M. J., "Optimization of Nanoparticle Separation through Solid State Nanopore 63rd Annual Meeting of the APS Division of Fluid Dynamics 2010.
- Jubery, T. Z., Bottenus, D., Dutta, P., and Ivory, C. F., "Preconcentration of Cardiac Proteins in a Microfluidic Device," Proceedings of ASME International Mechanical Engineering Congress and Exposition 2009.
- Prabhu, A. S., Jubery, T. Z., Freedman, K., Mulero, R., Dutta, P., and Kim, M. J., "High Throughput Nanofluidic Architectures for Nanoparticle Separation," Proceedings of ASME International Mechanical Engineering Congress and Exposition 2009.
- Ali, M., Islam, M. Q., Jubery, T. Z., and Islam, S. M. N. , "Mixing of Supersonic Jets with Different Merging Angles for Constant Inlet Pressure and Velocity," Proceedings of 8th International Conference on Mechanical Engineering, Bangladesh, 2009.
- Cui, H., Jubery, T. Z., Dutta, P., and Ivory, C. F., "Protein Separation by Isoelectric Focusing Coupled with Isotachopheresis on a Microfluidic Device," Proceedings of American Institute of Chemical Engineers (AIChE) Annual Meeting 2007.
- Hossain, M. Z., Muhammad, S., and Jubery, T. Z., "Dynamics Analysis of 2-Link Revolute Joint Robot Manipulator," Proceedings of IEEE 3rd International Conference on Electrical and Computer Engineering 2004.

HONORS AND AWARDS

- APSIM Training Award (2017)
- Leadership Academy Iowa State (2016)
- ASME IMECE Best Paper Award (2009).
- WSU (Washington State University) Travel Grant (2009).
- Deans List Award during undergraduate studies (1996-98).
- Mechanical Engineering Merit Scholarship during undergraduate studies (1996 -2000).
- Khalek and Bari Undergraduate Scholarship (1998).

PROFESSIONAL SERVICES AND INVOLVEMENT

- **Conference/Club Organization:**
 - Co-organizer, ML competition for workshop on Machine learning for Cyber-Agricultural Systems , Oct 10-11, 2022, Ames, Iowa.
 - Co-organizer, International workshop on engineered crops, April 28-29, 2014, Des Moines, Iowa.
 - Co-organizer, international conference of mechanical engineering, BUET, Bangladesh, 2001.
 - Organizer, multi-disciplinary journal club on machine learning and data science. 2016-18.
- **Reviewer Services:**

- Computer and Electronics in Agriculture
- Sensors
- Electronics
- AAAI-AIAFS
- MLCAS workshop
- Plant Breeding
- journal of imaging
- plant phenomics
- Agricultural and Forest Meteorology
- Journal of Fluids Engineering
- Journal of Manufacturing Science and Engineering
- ASME IMECE
- Electrophoresis
- Scientific Reports
- Scientia Agricola
- Grant proposal review: KAUST Research Proposal

PROFESSIONAL MEMBERSHIP

- American Society of Mechanical Engineering

LEADERSHIP AND OUTREACH

• Academic Organizations:

- Faculty Co-adviser, Mechanical Engineering Association, BUET, Bangladesh, 2002-2006
- Graduate Council Representative, Iowa State Postdoctoral Association. 2016-17
- Member, Engineering Plant Working Group, Iowa State University, 2013-2016
- Faculty Co-adviser, Mechanical Engineering Association, BUET, Bangladesh, 2002-2006

• Community Service and Outreach:

- Graduate College Representative, Iowa State Postdoctoral Association. 2017-18
- Judge, Graduate Research Symposium, Iowa State. 2017
- Interim Social Coordinator, Iowa State Postdoctoral Association. 2014-15
- Judge, Best Dissertation Award. 2017
- Social Coordinator, Baskar Lab, 2016-17
- Web Page developer, International Workshop on Engineered Crops, 2014
- Research Supervisor, High School Teachers, SWEET Program, WSU, 2008-09

HOBBIES

Robotics, Drone, Photography, Astronomy, Ukulele, Running, Biking, Racquet sports, and Community Services.