Mohammad Imrul Jubair

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EDUCATION

MSc. in Computer Science

University of Calgary, Canada.   Sep 2014 – Dec 2016

- Supervisor: Dr. Usman R. Alim
- CGPA: 3.775 / 4.00
- Thesis: "**Icosahedral Maps for a Multiresolution Representation of Earth Data**".
  Url: hdl.handle.net/11023/3527 and *Slides:* bit.ly/jubair-msc-slides

BSc. in Computer Science & Information Technology

Islamic University of Technology, Bangladesh.   Jan 2008 – Oct 2011

- CGPA: 3.85 / 4.00
- Thesis: "**An Enhanced Decision Based Adaptive Median Filtering Technique to Remove Salt and Pepper Noise in Digital Images**".

INTERESTS

- Computer Vision • Visualization • Computer Graphics

AWARDS, SCHOLARSHIPS AND GRANTS

- **Grant** for *Teaching for Active Learning Course*,   Aug 2018
  Ahasanullah University of Science & Technology.
  Amount: 10000 BDT

- **Workshop Grant**, German Climate Computing Center (DKRZ).   Oct 2016
  In the form of transportation & accommodation.

- **CPSC Travel Award**, University of Calgary.   Oct 2016
  Amount: 1200 CAD

- **Research Award** (2nd year of MSc), University of Calgary.   Sep 2015
  Amount: 6000 CAD

- **Research Award** (1st year of MSc), University of Calgary.   Sep 2014
  Amount: 6000 CAD

- **International Recruitment Graduate Award**, University of Calgary.   Sep 2014
  Amount: 2000 CAD

- **International Student Differential Fee Reimbursement Award**,
  University of Calgary.   Sep 2014
  Amount: 4126.17 CAD

- **OIC Undergraduate Student Scholarship**, Islamic University of Technology.   Jan 2008
  Amount: 12000 USD

TEACHING EXPERIENCE	■ **Faculty member**, Department of Computer Science and Engineering, Ahsanullah University of Science and Technology, Bangladesh.	May 2017 – Present

- Courses: *Image Processing, Distributed Database Systems, Computer Graphics.*

■ **Teaching Assistant**, Department of Computer Science, University of Calgary.   Sep 01, 2014 – Dec 31, 2016

- Course: *CPSC 217 - Introduction to Computer Science for Multidisciplinary Studies–1* (Python).

RESEARCH EXPERIENCE

■ **Undergraduate Research Supervisor**   Mar 2018 – Present
Department of CSE,
Ahsanullah University of Science and Technology, Bangladesh.
Projects: Real-time BdSL Detection, Toon2real (see *Ongoing Project* section for more).

■ **Research Assistant**   Sep 2014 – Dec 2016
Visualization & Graphics Group (VISAGG) at Graphics Jungle,
University of Calgary.
Undertaken tasks:
- Explored different NetCDF-based climate models and *Digital Earths*.
- Investigated their data structures.
- Applied Atlas of Connectivity Maps (ACM) on a climate model.
- Developed a method called "Icosahedral Maps" to extend ACM.

■ **Research Collaborator**   Nov 2014 – Dec 2016
German Climate Computer Center (DKRZ), Hamburg.
and National Center for Atmospheric Research (NCAR), USA.
Undertaken tasks:
- Applied "Icosahedral Maps" on the ICON (Icosahedral Nonhydrostatic) model.
- Made "Icosahedral Maps" applicable for all types of cells of ICON and partial grids.
- Applied MRA on *Hurricane Gaston*, *HD(CP)2* and *Agulhas Current* datasets using "Icosahedral Maps".
- Working with domain experts & collecting feedback.

TRAINING

■ **Trainee**, *Teaching for Active Learning Course*,   Aug 30, 2018 – Sep 1, 2018
offered by **Foundation for Learning, Teaching and Research**.
Instructors: *Prof. M. G. Samdani Fakir (VC, GUB), Prof. M. R. Kabir (Pro VC, UAP),*
Prof. Yousuf M Islam (VC, DIU), Prof. Dr. Abdur Razzaque and Prof. Syed Manzoorul Islam.

■ **Trainee**, Asia Pacific Communication Limited, Bangladesh.   Oct 18, 2010 – Nov 25, 2010

SKILLS   MATLAB, Python, C, C++, OpenGL Shading Language, WebGL, JAVA, CUDA.

- **See my codes:** *github.com/imruljubair*

SELECTED COURSE PROJECTS

■ **Implementing Atlas of Connectivity Maps for ICON Grid**   Sep 2014
Course: CPSC 601 – Visualization of Scientific Data, Fall 2014, UofC.
Language: MATLAB [*github.com/imruljubair/SciVis-Course-Project-Fall-2014*]

■ **GPU based Multiresolution Visualization of ICON Data**   Jan 2015
Course: CPSC 691 – Rendering, Winter 2015, UofC.
Language: GLSL & C [*github.com/imruljubair/Visualization-using-GLSL*]

	▪ **A Game using OpenGL**	May 2010

Course: CIT 4506 – Computer Graphics & Multimedia Systems Lab, IUT.

Language: OpengGl (legacy) & C [*github.com/imruljubair/A-Game-with-old-OpenGL*]

▪ **A Bank Account Management System**   Oct 2009

Course: CIT 4502 – Visual Programming Lab, IUT.

Language: Java & MySQL

HOBBY PROJECTS

▪ **RayVis**   Jan 2019

Language: MATLAB [*github.com/imruljubair/RayVis*]

▪ **Simple Perceptron Simulator for Kids**   Aug 2018

Language: Python [*github.com/imruljubair/Simple-perceptron-simulator-for-kids*]

▪ **Environment Mapping using Texture Map**   Feb 2015

Language: OpenGl (legacy) & C [*github.com/imruljubair/Environment-Mapping-using-Texture-map*]

▪ **B-Spline Curve Simulator**   Feb 2015

Language: OpenGl (legacy) & C [*github.com/imruljubair/B-Spline-Curve-Simulator*]

▪ **A Very Simple Raytracer**   Oct 2014

Language: C++ [*github.com/imruljubair/a-very-simple-raytracer*]

SELECTED PUBLICATIONS

▪ Sultan K. M. A., Rupty L. K., Jubair M. I., Khan S. H. & Islam M. N., **"Toon2real: A Technique for Cartoon to Photorealistic Image Synthesis"** (Submitted), *15th International Conference on Machine Learning and Data Mining (MLDM 2019)*, USA, 2019.

▪ Sultan K. M. A., Rupty L. K., Pranto N. I., Shuvo S. K. & Jubair M. I., **"Cartoon-to-real: An Approach to Translate Cartoon to Realistic Images using GAN"** (Accepted for poster), *International Conference on Innovation in Engineering and Technology (ICIET)*, Dhaka, Dec 2018, [arxiv.org/abs/1811.11796].

▪ Hoque O., Jubair M. I., Islam M. S., Akash A. & Paulson A., **"Real Time Bangladeshi Sign Language Detection using Faster R-CNN"** (Accepted), *International Conference on Innovation in Engineering and Technology (ICIET)*, Dhaka, Dec 2018, [arxiv.org/abs/1811.12813].

▪ Jubair M. I., Alim U., Röber N., Clyne J. & Mahdavi-Amiri A., **"Icosahedral Maps for a Multiresolution Representation of Earth Data"**, *21st International Symposium on Vision, Modeling and Visualization (VMV)*, Bayreuth, pp. 161-168, Oct 2016.

▪ Jubair M. I., Alim U., Röber N., Clyne J., Mahdavi-Amiri A. & Samavati. F., **"Multiresolution Visualization of Digital Earth Data via Hexagonal Box Spline Wavelets"**, (Poster), *IEEE Visualization Conference (IEEE VIS)*, Chicago, Oct 2015.

▪ Jubair M. I. & Banik P., **"A Technique to Detect Books from Library Bookshelf Image"**, *IEEE 9th International Conference on Computational Cybernetics (IEEE ICCC)*, Hungary, 2013.

▪ Jubair M. I. & Banik P., **"A Simplified Method for Handwritten Character Recognition from Document Image"**, *International Journal of Computer Applications*, vol. 51, no. 14, pp. 50–54, 2012.

- Jubair M. I., Rahman M. M., Ashfaqueuddin S. & Ziko I. M., **"An Enhanced Decision Based Adaptive Median Filtering Technique to Remove Salt and Pepper Noise in Digital Images"**, *14th International Conference on Computer and Information Technology (ICCIT)*, Dhaka, 2011.

FOR MORE: *bit.ly/jubair-gscholar*

ONGOING PROJECT

Bangladeshi Sign Language Detection App for Smartphones   Apr 2018 – Present
- To develope an application to detect Bangladeshi Sign Language (BdSL) from images in real-time.
- A Fully working tool is developed for desktop using Faster R-CNN.
- Next target is to develop an app for smartphones.
- A dataset – **BdSLImset** (*Bangladeshi Sign Language Image Dataset*) is created.

Toon2real   Jul 2018 – Present
- To translate cartoon-styled images into their real-world scenes using Generative adversarial network (GAN).
- The project stood the 1st runner-up position in *MINDSPARKS'19.*

***What's in Your Mind* is in Your Face!**   Sep 2018 – Present
- A GAN-based application to transfer the emotions from a Facebook post of an user to his or her facial expression in profile picture.

TALKS
- **Talk** on – *"Using Wavelets to Compress ICON and MPAS data sets"*.
  Host: German Climate Computing Center (DKRZ), Germany.   Oct 14, 2016

- **Seminar talk** on – *"Icosahedral Maps for a Multiresolution Representation of Earth Data"*.
  Host: Department of Computer Science, University of Calgary.   Dec 02, 2016

- **Presentation** on – *"Icosahedral Maps for the Climate Models"*,
  at CSEdWeek 2016, University of Calgary.   Dec 09, 2016

- **Presentation** on – *"Icosahedral Maps for a Multiresolution Representation of Earth Data"*,
  at VMV 2016, Bayreuth.   Oct 2016

- **Presentation** on – *"CUDA Programming Basics"*, at VISAGG Reading group seminar,
  University of Calgary.   Mar 2016

- **Presentation** on – *"A Hexagonal Box Spline Wavelet for Level of Detail Visualization of Digital Earth Data"*, at Computer Science Industrial Day 2015, University of Calgary.   Dec 2015

- **Talk** on – *"Tessellation: Getting Started"*, at Grad Seminar Series (CPSC 691 Rendering Course),
  University of Calgary.   Mar 2015

- **Presentation** on – *"An Enhanced Decision Based Adaptive Median Filtering Technique to Remove Salt and Pepper Noise in Digital Images"*, at ICCIT 2011, Dhaka.   Dec 2011

MISCELLANEOUS
- **Judge**, Software Showcasing Contest, *MINDSPARKS 2019*,   Jan 2019
  Ahsanullah University of Science and Technology.

- **Convener**, Programming Contest, *CSE WEEK 2018*,   Jul 2018
  Ahsanullah University of Science and Technology.

- **Participant**, *CSEdWeek 2016*, University of Calgary.   Dec 2016
- **Member**, Bangladeshi Student Association, University of Calgary.   Sep 2014 – Dec 2016
- **Vice President**, Islamic University of Technology Computer Society.   Nov 2010 – Oct 2011
- **Microsoft Student Partner**, Islamic University of Technology.   Jan 2011 – Oct 2011
- **Organizing Member**, IUT 3rd National ICT Fest, Bangladesh.   Apr 2011
- **Volunteer**, IUT 1st & 2nd National ICT Fest, Bangladesh.   Apr 2008 & May 2010
- **YouTube Channel** (2D animation): *youtube.com/user/jubairization*

REFERENCES
- **Dr. Usman R. Alim**
  Associate Professor,
  Department of Computer Science, University of Calgary,
  2500 University Drive NW Calgary, AB T2N 1N4 Canada.
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- **Dr. Niklas Röber**
  Visalization Scientist,
  German Climate Computing Center (DKRZ),
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[*CV updated on 2019-02-01*]