KAUSHIK ROY

Dhaka, Bangladesh

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RESEARCH INTEREST

Computer Vision, Machine Learning, Deep Learning.

EDUCATION

Kyung Hee University, South Korea   **CGPA: 4.013/4.30**
M.Sc in Computer Science and Engineering   *Sept. 2015 - Aug. 2017*

Institute of Information Technology, University of Dhaka, Bangladesh   **CGPA: 3.66/4.00**
Bachelor of Information Technology (*Major: Software Engineering*)   *Feb. 2009 - Dec. 2012*

PUBLICATIONS

Journal Articles

- **Kaushik Roy**, Md Rifat Arefin, Farkhod Makhmudkhujaev, Oksam Chae, and Jaemyun Kim *"Background Subtraction using Dominant Directional Pattern"* in IEEE Access, vol. 6, pp. 39917-39926, June 2018.

- Gihun Song, **Kaushik Roy**, Kiok Ahn, M. Abdullah-Al-Wadud, Md. Tauhid Bin Iqbal, Oksam Chae *"A Structural Pattern-based Approach for Betacam Dropout Detection in Degraded Archived Media"* in IET Image Processing, vol. 13, no. 1, pp. 224-232, Jan. 2019.

- Md Mehedi Hasan, Tasneem Rahman, **Kaushik Roy**, Kiok Ahn, Oksam Chae *"Hawkeye: Cloud Computing Based Automated Video Error Detection in Real-Time"* in Journal of Internet Technology, vol. 18, no. 1, pp. 45-53, Jan. 2017.

Conference Papers

- **Kaushik Roy**, Jaemyun Kim, Md Tauhid Bin Iqbal, Farkhod Makhmudkhujaev, Byungyong Ryu, Oksam Chae *"An Adaptive Fusion Scheme of Color and Edge Features for Background Subtraction"* in IEEE International Conference on Advanced Video and Signal based Surveillance (AVSS 2017).

- Jaemyun Kim, Adin Ramirez Rivera, Byeongwoo Kim, **Kaushik Roy**, Oksam Chae *"Background Modeling using Adaptive Properties of Hybrid Features"* in IEEE International Conference on Advanced Video and Signal based Surveillance (AVSS 2017).

PROFESSIONAL EXPERIENCE

Computer Vision Engineer (R&D) @ MOPIC Co., Ltd., South Korea   **Nov. 2017 - Present**

- Employed Encoder-Decoder architecture with skip-connection to estimate depth from single image and developed Android application for demonstration. Studied U-net, LinkNet, and their variants.

- Prepared dataset, analyzed, augmented and trained Object (9 cards) Detection model (Single Shot Multibox Detector with MobileNet) using TensorFlow Object Detection API.

- Developed 3D media player for Windows platform. Employed wxWidgets and GStreamer for GUI development and video decoding respectively and rendered using OpenGL. Integrated 3D eye tracking technique for depth sensing from Intel RealSense SDK.

- Acquired knowledge on several well-known deep learning architectures, for instances AlexNet, VGG, Inception, Mobilenet-V1, Mobilenet-V2, ResNet using Tensorflow (Keras high level API), to solve (single/multi-label) classification problem. Learned about integration of handcrafted feature (Kirsch/Sobel) with convolution layer and building custom architecture having multiple output.

Software Engineer @ Samsung R&D Institute Bangladesh (SRBD)   **Mar. 2013 - Aug. 2015**

o Developed new feature (Camera API, Drag & Drop, and Network API) for Samsung Smart TV SDK Emulator. Contributed to Samsung TV App to Tizen App Conversion tool development.

o Developed and Enhanced Features (Detail View, Film Rating, Film creation, Report and Help module) for Android and IOS application connected with Samsung NX1, NX500 or NXmini2 camera.

o Contributed to an in-house research project entitled "Decision making through multiple object tracking and Collision Detection" by developing an object detector using Haar Cascades.

Intern @ ITA Technology, South Korea   **July 2016 - Aug. 2016**

o Studied existing video error detection approach and implemented a novel approach for Betacam Dropout error detection in degraded archived media.

KEY SKILLS

Programming Language	C++, Java, Python, HTML, CSS, JavaScript, PHP
Computer Vision Libraries	OpenCV, TensorFlow
Tools	MS Visual Studio, PyCharm, Android Studio, TeXstudio, Git
Operating System	Windows, Ubuntu, Mac OS

LANGUAGE PROFICIENCY

IELTS   Overall 7.0 (L-8.0, R-6.0, W-6.5, S-7.5)

ACHIEVEMENT

o 1st student of my school to get A+ in Secondary board examination.

o Obtained 4th place in ICT-Olympiad of IBBL IUT 3rd National ICT Fest-2011.

o President Scholarship through all semesters of Master's degree.

o Participated and presented research paper in 14th IEEE International Conference on Advanced Video and Signal based Surveillance (AVSS2017).

o Board scholarship in Higher Secondary Education for outstanding result in Secondary Education.

o Board scholarship through all semesters of Bachelor degree for outstanding result in Higher Secondary Education.

PERCEIVED STRENGTH

o Dedicated to work and great team player

o Organized and self-motivated

o Able to work under challenging environment

REFERENCES

o **Dr. Oksam Chae**
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