DYAH ADILA

CONTACT INFORMATION	1112 SE 8th St Minneapolis, MN United States - 55414	*Mobile:* (1) 612-383-6050 *E-mail:* adila001@umn.edu

RESEARCH INTERESTS

Machine/Deep Learning, Computer Vision, AI for Healthcare.

EDUCATION

University of Minnesota (UMN), Twin Cities, United States **Sep 2019 - Present**
Master of Science (Computer Science) (CGPA: 4.0/4.0)

- **Relevant Courses**: Machine Learning, Nonlinear Optimization, Data Mining, Computer Vision.
- **Thesis**: Machine Learning for Clinical Applications.

Nanyang Technological University (NTU), Singapore **Aug 2013 - May 2017**
Bachelor of Engineering (Electrical and Electronic Engineering)

RESEARCH EXPERIENCE

Deep Learning Group, UMN, Twin Cities **Jan 2020 - Present**
Project: *COVID-19 Identification from Chest X-rays*
Mentor: *Dr. Ju Sun*

- Develop a rapid diagnostic model for COVID-19 in chest X-rays using data and task parallelism.
- Work with imbalanced, noisy medical dataset in collaboration with M-health Fairview.
- Build GAN for data augmentation to tackle class imbalance problem.
- Use GAN to detect anomalous images in the COVID-19 data.

Spatial Computing Group, UMN, Twin Cities **Jan 2020 - Sep 2020**
Project: *Physics-Guided Anomalous Trajectory Detection*
Mentor: *Dr. Shashi Shekhar*

- Design a novel unsupervised anomaly detection algorithm to detect anomalous trajectory.
- Extract spatial features from normal trajectories using spatial rasterization and DBSCAN.
- Interpolate trajectories with missing entries based on the physics guided space-time prism.
- Evaluate the algorithm on GPS data for all US coastal area provided by Marine Cadastre.

PUBLICATIONS

D Nairy, **Dyah Adila**, Y Li, S Shekhar. *Physics-Guided Anomalous Trajectory Detection.* Submitted to AAAI Fall symposium on "Physics-guided AI to Accelerate Scientific Discovery". [Link]

J Sun, T Li, L Peng, **Dyah Adila**, et al. *Artificial Intelligence to Accelerate COVID-19 Identification from Chest X-rays.* In preparation for The Journal of the American Medical Association (JAMA. Impact Factor: 45.540).

TEACHING EXPERIENCE

CSCI 5523 - Introduction to Data Mining (UMN, Twin Cities) **Spring, Fall 2020**
Mentor: *Dr. Vipin Kumar*

- Design homework, project, and examination for class of 120 students.
- Conduct weekly office hours to help students with introductory machine learning concepts.
- Plan and adopt new remote learning measures to adapt with the COVID-19 pandemic.

TECHNICAL SKILLS

- **Programming:** C, C++, Java, Python, R, Matlab
- **Machine learning framework:** PyTorch, TensorFlow, Keras
- **Mobile and web:** HTML, CSS, JavaScript, React, React Native, Android, AngularJS
- **Misc:** Github, Google Colab

SELECTED ACADEMIC PROJECTS	**Deep Learning Using Transfer Learning**	**March 2020 - May 2020**

- Successfully transferred ImageNet weights for X-ray classification task.
- Implemented Grad-CAM to visualize convolution filter focus area.
- Achieved 80% generalization AUROC on the target task.

Undergraduate Projects **May 2015 - May 2017**

- Designed and developed a web-based intelligent activity planner for NTU students.
- Featured in the top ten team of Singapore Microsoft Imagine Cup 2016 for developing a real-time crime reporting mobile application.

PROFESSIONAL EXPERIENCE **Traveloka, Indonesia** **Jul 2017 - Jul 2019**
Software Engineer

- Led the development of company-wide React Native user interface components library (runs on Android and iOS), which speed up development time by 2x.
- Built Traveloka's customer-facing and business-facing mobile applications.

JPMorgan Chase, Singapore **May 2016 - Jul 2016**
Software Engineer Intern

- Built a real-time log monitoring tool to keep track of daily transactions using Java.
- Built an API for multiple currency transer application.

Seagate Technology, Singapore **Jan 2016 - May 2016**
Research Engineer Intern

- Built a continuous integration framework which automated the build and test pipelines.
- Learnt about the real life use-cases of databases.

VOLUNTEER EXPERIENCE **Section Leader** **Apr 2020 - May 2020**
Code in Place, offered online by Stanford University

- Part of a teaching team for a community service project offered by Stanford.
- Prepared and taught a weekly discussion section of 10-12 students in an introductory online Python programming course.

REFERENCES **Vipin Kumar** (Professor, Computer Science & Engineering, UMN Twin Cities)
kumar001@umn.edu

Ju Sun (Professor, Computer Science & Engineering, UMN Twin Cities)
jusun@umn.edu

Shashi Shekhar (Professor, Computer Science & Engineering, UMN Twin Cities)
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Christopher Tignanelli (Professor, Department of Surgery, UMN Twin Cities)
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