Jason Ken Adhinarta

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EDUCATION

Boston College   Chestnut Hill, MA
*B.S. in Computer Science and Mathematics; **GPA: 3.97/4.00***   *Aug 2021 – May 2025 [expected]*
Activities: Machine Intelligence Group, Boston College Competitive Programming Team

Sekolah Pelita Harapan Lippo Village   Tangerang, Indonesia
*International Baccalaureate Bilingual Diploma; **GPA: 43/45***   *Aug 2018 – May 2021*

RESEARCH EXPERIENCE

EPFL CVLab   Lausanne, Switzerland
Project Student (advised by Dr. Jiancheng Yang and Prof. Pascal Fua)   *May 2023 – Present*
- Developed point-cloud/volume-based baseline methods for rib segmentation and centerline extraction
- Implemented methods for heart reconstruction on multimodal data

Boston College Computer Vision Lab   Chestnut Hill, MA
Undergraduate Research Assistant (advised by Prof. Donglai Wei)   *Sep 2021 – Present*
- Designed methods to tackle multimodal problems in connectomics—blood vessel tracking, dendritic spine segmentation, and vesicle detection—by utilizing deep learning techniques (PointNet++, U-Net3D, Cellpose)
- Maintained the SNEMI3D, RNR-EXM, and AxonEM challenge benchmarks on the Grand Challenge platform
- Created a Dask-powered framework to orchestrate data processing pipelines on large-scale datasets; ported 3D algorithms (3D connected components, euclidean distance transform, and TEASAR skeletonization) from the Seung Lab to be chunking-compatible
- Onboarded research interns onto the Boston College Linux Cluster and PyTorch Connectomics ecosystems

Emmerich Research Center   Jakarta, Indonesia
Research Intern (advised by Dr. Eden Steven)   *Aug 2018 – Aug 2021*
- Researched the lifecycle of Black Soldier Flies by employing segmentation (YOLACT, Mask-RCNN) and tracking methods (Differentiable Particle Filters, Tracking-by-Animation)
- Used XGBoost-powered models to standardize palm oil fruit grading for industry partners; deployed GCP pipelines to automate annotation/training cycles
- Developed contamination detection methods to streamline synthetic leather production systems
- Rigged heat and optical control systems to study phosphorescent phenomena under cryogenic temperatures
- Co-designed an electronics programming curriculum targeted at highschool students; instructed at various workshops

PUBLICATIONS

Xiaomeng Han, Xiaotang Lu, Peter H. Li, Shuohong Wang, Richard Schalek, Yaron Meirovitch, Zudi Lin, **Jason K. Adhinarta**, Daniel Berger, Yuelong Wu, Tao Fang, Elif S. Meral, Shadnan Asraf, Hidde Ploegh, Hanspeter Pfister, Donglai Wei, Viren Jain, James S. Trimmer, Jeff W. Lichtman. **Multiplexed Volumetric CLEM enabled by antibody derivatives provides new insights into the cytology of the mouse cerebellar cortex**. bioRxiv:10.1101/2023.05.20.540091v2 [under review]

Shixuan Gu, **Jason K. Adhinarta**, Mikhail Bessmeltsev, Jiancheng Yang, Jessica Zhang, Daniel Berger, Jeff W. Lichtman, Hanspeter Pfister, Donglai Wei. **FreSeg: Frenet-Frame-based Part Segmentation for 3D Curvilinear Structures**. [manuscript in preparation]

Liang Jin, Shixuan Gu, Donglai Wei, **Jason K. Adhinarta**, Kaiming Kuang, Yongjie J. Zhang, Hanspeter Pfister, Bingbing Ni, Jiancheng Yang, Ming Li. **RibSeg v2: A Large-scale Benchmark for Rib Labeling and Anatomical Centerline Extraction**. IEEE Transactions on Medical Imaging, 2023. arXiv:2210.09309

Jason K. Adhinarta, Eric Jobiliong, Muhandis Shiddiq, Henri P. Uranus and Eden Steven. **Light storage and thermal-assisted switching of $SrAl_2O_4$:Eu^{2+}, Dy^{3+}**. Journal of Nonlinear Optical Physics & Materials, 2019. doi:10.1142/S0218863519500425

PATENTS

Edmund F. Anderson, Eden Steven, Ray A. O. Sinurat, **Jason K. Adhinarta**, Calvin, Alvius Tinambunan, Josavan Ezekhiel, Andrew D. Widjaja. **A Robotic Method of Monitoring, Hydrating, Training, and Treating Bacterial or Fungal Infections of New-growth Fungal Cultures to Produce Densified Sheet-like Lateral Networks of Fungal Materials**. PDKI:P00202009416 [pending]

Teaching Assistantship

MT4480: Math and Machine Learning (Prof. Elisenda Grigsby)   Boston College, Spring 2023

Awards

Sophomore Scholar Award   Boston College, 2023
Granted to the top 5% of the sophomore class

Gabelli Presidential Scholarship   Boston College, 2021
Competitive four-year full-tuition scholarship awarded to ~15 students annually

Best Poster Presentation   ISMOA 2019
Awarded at the 12th International Symposium on Modern Optics and its Applications

Selected Projects

Moiré   Writeup GitHub
Modelled the angle dependence of Ohmic resistance in Moiré patterns induced by hexagonal lattices

Reversing Nearness   Writeup GitHub
Proposed a gradient descent-based solution for Al Zimmermann's combinatorics optimization contest

SimpleMMO PVP Tool   Website GitHub
Developed a web-based tool to allow SimpleMMO players to aggregate results of PVP API endpoint scraping

Skills

Proficient: PyTorch, OpenCV, Dask, SLURM, Linux CLI, Arduino

Intermediate: Javascript, Docker, Flask, PostgreSQL, LabView, Igor Pro, LaTeX/TikZ

Basic: C++, Coq, Haskell, AWS/GCP

Coursework

Computer Science: Logic and Computation, Randomness and Computation, Computer Organization, Computer Systems

Mathematics: Probability Theory, Differential Equations, Multivariable Calculus, Linear Algebra

Physics: Vibrations and Waves, Intro to Modern Physics