Mingzhe Hu

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EDUCATION

Columbia University (CU)   **New York, US**
M.S. in Electrical Engineering, GPA: N.A.   *Expected Feb 23*
Courses: Heterogeneous Computing, Machine Learning, Neural Network & Deep Learning, Big Data Analysis

Southeast University (SEU)   **Nanjing, CN**
B.Eng. in Information Engineering, GPA: 3.57 / 4.0   *Aug 16 - Jun 20*
Courses: Fundamentals of database, Computer Networks, Fundamentals of Computer Vision
Honors & Awards: Iron Shoulder Scholarship (top 5%), School's Excellent Graduation Paper (top 15%)

Technical University Munich (TUM)   **Munich, DE**
Exchange student, sponsored by SEU   *Oct 19 - Mar 20*
Courses: Seminar in Computer Graphics, VLSI Lab, Computer Vision Lab, Report: Thesis Writing Workshop

HONORS AND SKILLS

Honors: Top 3% in DataWhale & Ali Tianchi SVHN Dataset Challenge, Report
Programming Languages: Python, CUDA, C
Software and Tools: Visual Studio Code, Google Colab, Google Cloud Platform, Twitter API, Airflow, Git, LaTeX
Libraries: PyCUDA (Nsight Profiler), PyOpenCL, PyTorch, Tensorflow, PySpark, Selenium, Unittest
Operating Systems: Windows 10, Linux (CentOS 7, Ubuntu)

INDUSTRY EXPERIENCE

Megvii Technology Limited   **Remote**
Workshop in AI photography: Real-time RAW Image Denoising, Code   *Aug 21*
- Designed U-Net model with separable convolution and K-Sigma transformation to adjust to different ISO
- Leveraged Bayer augmentation by BayerUnify and reflect padding with rawpy, improved PSNR by 1 dB
- Rated as top-5 in the final assessment with respect to PSNR of both images and gif denoising

Huawei Inc.   **Nanjing, CN**
Software Engineer Intern   *Oct 20 – Apr 21*
- Maintained subscription and authentication section of client IPTV/OTT with regression test
- Worked on OpenStack's manila driver functional test with unittest
- Conducted Python programming training to test group colleagues

PROJECTS

NBA Awards Prediction, Code   **New York, NY**
Project Leader, Supervisor/Instructor: Prof. C.Y. Lin   *Sep – Dec 21*
- Fetched player's technical, bio, news and social impact data with Python Requests and BeautifulSoup
- Simulated next page click with Selenium to deal with page turning situations
- Implemented branch development and merge with Git

Acceleration of GloVe Representation on Heterogenous Platform, Code   **New York, NY**
Project leader, Supervisor/Instructor: Prof. Zoran Kostic   *Sep – Dec 21*
- Designed work-efficient reduction in sum and maximum finder, with increase in acceleration ratio of 5 times
- Solved dimension unmatched issues in basic matrix-level calculation by implementing broadcast of addition and division between different dimensions of GPU arrays with alignment
- Addressed low efficiency problems in atomic addition by designing a mapping logic
- Achieved more than 80 times of acceleration ratio compared with numpy implementation in naïve version and 3.7 times in neural network version

Real-time Person Re-identification in Multiple Object Tracking, Code   **New York, NY**
Project leader, Supervisor/Instructor: Prof. Richard Zemel   *Sep – Dec 21*
- Enhanced ReID model by training with generated images from DCGAN
- Modified backbone by adding Squeeze and Excitation module to residual blocks
- Decreased in ID switches by 10% in MOT16 challenge evaluation with 1ms latency of tracking with GPU