

KAI YU

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School of Computer Science and Engineering, Beihang University
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EDUCATION

Beihang University (BUAA)	Beijing	09/2012 – 07/2016
<ul style="list-style-type: none">• Bachelor of Computer Science.• Under guidance of Prof. Biao Leng.• Major GPA: 3.67/4.0 (Overall Ranking: 9/240)		
Kyushu University	Japan	10/2014 – 08/2015
<ul style="list-style-type: none">• International Exchange Student to School of Engineering.• Under guidance of Prof. Keiji Iramina.• GPA: 3.4/4.0 (1st semester: 3.0/4.0; 2nd semester: 3.85/4.0)		

Honors & Awards

2013 - Silver Medal (17/154)	ACM-ICPC Asia Regional Contest
2013 - 1st Prize (Finals Top 5%)	Lanqiao National Software Professionals Design and Entrepreneurship Contest
2013 - 1st Prize (Top 5%)	Academic Competition Award of BUAA (twice in succession)
2015 - 2nd Prize (Top 23%)	Scholarship of Academic Performance of BUAA
2014 - Bronze Award (25/131)	24th “Feng Ru Cup” Competition of Business Plan (leader of 7 members’ team)
2014 - 3rd Prize (5/20)	“Beyond Star” Program Design Contest (leader of 3 members’ team)
2013 - 3rd Prize	National English Contest for College Students
2014 – Awarded Full Scholarship under the State Scholarship Fund for exchange students by China Scholarship Council.	

PUBLICATIONS

- Leng Biao, Yu Liu, **Kai Yu**, Xiangyang Zhang, and Zhang Xiong. “*3D object understanding with 3D Convolutional Neural Networks.*” Information Sciences (2015).
- Leng Biao, Yu Liu, **Kai Yu**, Songting Xu, Ziqing Yuan, and Q. I. N. Jingyan. “*Cascade Shallow CNN Structure for Face Verification and Identification.*” Neurocomputing (2016).
- **Kai Yu**, Yang Zhou, Da Li, Zhang Zhang, and Kaiqi Huang. “*A Large-scale Distributed Video Parsing and Evaluation Platform.*” Chinese Conference on Intelligent Visual Surveillance (2016). Submitted.

WORK EXPERIENCE

Founder & Software Engineer	Theia Technologies Co. Ltd	Beijing	09/2015 – 05/2016
<ul style="list-style-type: none">• Developed independently a CNN based face detection & recognition C/C++ & C# software development kit (FDR-SDK) (not including CNN model training), the core product of the company, which supports popular CNN structures similar to Faster R-CNN & GoogLeNet, and is extensible for new layers & structures and able to run on Windows/Linux/ARM-Linux, with CPU-Only & CPU+GPU modes. Wrote about 17000 lines of highly reusable C/C++ codes in the project following strict code style.• Optimized the speed & memory cost of the FDR-SDK, making it able to forward propagate GoogLeNet once in 38.9ms on Intel i7-4790K, 8.8ms on GeForce 980Ti and 116.5ms on Tegra K1 using CUDA, costing around 200MB memory for detection and recognition on 720p images.• Dived into the model format in Caffe (a popular deep learning framework) for developing an auxiliary program with Python & Matlab for auto model migration from Caffe to the FDR-SDK.• Developed independently an on-chip real-time Face-to-ID-card authentication system with UI based on the FDR-SDK, integrating USB/web camera and ID-card reader device by quickly studying through the documents of their SDKs within a week. The system passed robustness test for industrial use.• Concurrently managed development of 4 systems based on the FDR-SDK: standalone face verification module with socket API, full application system of face retrieval in videos, face detection and recognition web demo and even-higher encapsulated face verification SDK. Instructed 10 co-workers on various techniques required by these systems.			
Intern	Institute of Automation, Chinese Academy of Sciences	Beijing	05/2016 – Present
<ul style="list-style-type: none">• Assisting research under guidance of Prof. Kaiqi Huang and Dr. Zhang Zhang. Read 10 papers on pedestrian recognition and re-identification based on attributes thoroughly and made concluding notes within a week.			

- Designed the system framework of a large-scale distributed video parsing and evaluating (LaS-VPE) platform based on Spark Streaming, Kafka, HDFS, etc., featuring flexibility for combining various video understanding algorithms, fault-tolerance and robustness, system overall performance evaluation, meta data saving and user feedbacks collection. Open-sourced the project on GitHub.
- Developed the core part of the LaS-VPE platform while concurrently managing development of 6 submodules each assigned to a co-worker. Instructed two interns with limited CS background to finish their modules satisfyingly.
- Designed a Web UI of the LaS-VPE platform, which is the key to the project's feature: flexible execution planning and feedbacks collecting intended for incremental learning and fine-tuning for specific surveillance scenes.

ACADEMIC PROJECTS

Implementation of State-of-the-art Papers

- *3D object retrieval with stacked local convolutional autoencoder*
- *Blessing of Dimensionality: High-dimensional Feature and Its Efficient Compression for Face Verification*
- *Face Alignment at 3000 FPS via Regressing Local Binary Features*
- *Joint Cascade Face Detection and Alignment*

Multi-cycle Microprocessor **Beihang University** **Beijing** **12/2013 – 02/2014**

- Designed a multi-cycle microprocessor under MIPS architecture, consisting of 1300+ lines of Verilog-HDL codes, supporting 56 MIPS-C5 instructions and I/O interruption handling. Assisted debugging in 5 classmates' projects.
- Acknowledged as an Excellent Project (15%) by passing 8 times of spot testing and 1v1 code review by professor.

Extended PL/0 Compiler **Beihang University** **Beijing** **09/2015 – 02/2016**

- Developed a compiler consisting of 2000+ lines of C++ codes, supporting compilation error reporting, PCODE generation and interpreter-based execution with runtime-error checking, concurrently with FDR-SDK development.

EXTRACURRICULAR ACTIVITIES

Volunteer **APRICOT-APAN** **Japan** **02/2015 – 05/2015**

- Selected from native & foreign student appliers for excellence in both Japanese and English. Responsible for reception.

Teaching Assistant **BUAA SCSE** **Beijing** **05/2014 – 07/2014**

- Developed independently a JMail-based system for assignment receiving, accounting, and task delivery of the Object-Oriented Programming Course. Released a first version within a week. Learnt to enhance robustness.

Department Undersecretary **BUAA Shahe Night School** **Beijing** **03/2012 – 07/2013**

- Managed teaching affairs including course design, classroom & lecturer arrangement, contact & announcement.

Lecturer **BUAA Shahe Night School** **Beijing** **10/2012 – 07/2013**

- Offered lectures on basic computer techniques to over 10 rear staffs almost new to computer, well-comprehended.

Staff **BUAA Student Union** **Beijing** **10/2012 – 10/2014**

- Participated testing, updating, developing and advertising of a campus application named "HandyBUAA". Learnt and practiced Android development and Python + Django based server development.

TECHNICAL SKILLS AND OTHERS

- Language Ability: Chinese (Native), Japanese (JLPT N1)
English (TOEFL 110; GRE V 151, Q 167, AW 3.5)
- Accreditation: China Computer Federation - Computer Accreditation for Professionals (470/500 pts)
- Programming Languages: C/C++, JAVA, C#, Matlab, Python
- Programming Utilities: OpenCV, SSE/AVX/NEON, BLAS, GIT, GCC, CMake, Caffe
- Programming Platforms: CUDA, OpenCL, JNI/NDK, Visual Studio, Eclipse, Code::Blocks
- GitHub Profile: <https://github.com/kyu-sz>
- LinkedIn Homepage: <http://www.linkedin.com/in/kaiyu1993>
- Blog: <https://szykk1993.wordpress.com/>; http://blog.csdn.net/kyu_115s/ (Chinese)