1010 W University Ave Apt 536
Urbana, Illinois, 61820

July 12, 2018

Dear Professor Dawn Song,

I am an incoming graduate student in the University of Berkeley Meng Program. I very grateful and look forward to joining your capstone project in Artificial Intelligence in Data Science. I select this project mainly because of my past experience in a data science project. During a research project, my teammate and I fetched thousands of data from LinkedIn and we spend a long time building a program based on python panda to analysis this huge chunk of data. Since then I realized the necessity and demand for a data analysis solution. “AI in data science” is an exciting opportunity to combine the power of two cutting-edge technology—machine learning and big data together.

I was majoring in computer engineering at the University of Illinois at Urbana Champaign. My interest in data science first starts from my summer internship in Huawei during my sophomore year where I get exposed to internet infrastructures and servers. I embraced and learned the computer network system and internet protocols when I write unit tests for TCP servers and benchmark C++ based server performance during the concurrency. After I went back to school, I build a multithread web crawler program that could get 25K user data from LinkedIn. The development of the web crawler involves several fields including network traffic, system design, multithread synchronization, website page inspection, optimization and moral & ethic issue. This student project totally aroused my passion for data science and let me realized how powerful data science is. after we build a student career mapping and demography with our data [https://github.com/nlyu/Project_URS/blob/master/2017URS.pdf].

Last summer I interned in Yahoo as a software developing in Spark team which gives me a closer look at big data. Our team main team the source code for Spark as well as Hadoop, and built Spark programs that analyze data from Yahoo Finance. During the internship, I get knowledge from web development when I rebuild the Spark monitor web page, knowledge from distribution system when I work with the big data clusters, and real industry experience in project mane gent and company teamwork.

In terms of AI, I used to take two related class: CS440(Artificial Intelligence) and ECE398(Applied Big Data) where I learn both theoretical knowledge and applied machine learning tools. This is a class final project which I trained a pong gram to fight against it self[https://github.com/nlyu/Project-Artificial-Intelligence]. I would greatly appreciate the opportunity to join this capstone project. If I can offer any further details, please contact me at 217-200-6199, or email me at nlyu2@berkeley.edu. I am very excited about the possibility of working for the Professor Dawn Song’s Lab and have enclosed my resume for review. Thank you for your time and consideration.

Sincerely,
Nuochen Lyu

LYU Nuochen

217-200-6199, lnc0519@gmail.com, https://github.com/nlyu

EDUCATION

University of Illinois Urbana Champaign — **Urbana-Champaign, IL**
College of Engineering — 09/2014-05/2018
Major in Computer Engineering - BS, Cum GPA: 3.6/4.0
Expected degree conferral date: May 2018 | GRE: V158 Q170 W3.5 | TOEFL: 112

INTERNSHIP EXPERIENCES

Yahoo Inc. — **Champaign, IL**
Summer Software Engineering Intern — 05/2017 – 08/2017

- Interned in the Spark team from Yahoo Big data Hadoop product family and as Apache Spark contributor;
- Debugged, improved and revised Spark Scala source code for both yahoo internal use and public community version. Public contribution: [SPARK-20713]https://github.com/apache/spark/pull/18819
- Built, enhanced, added sorting and searching in Spark history website page from static forms into javascript based Data table; Public contribution: [SPARK-21798] https://issues.apache.org/jira/browse/SPARK-21798

Huawei Technologies Co. Ltd — **Nanjing, China**
Summer Software Engineer Intern — *05/2016-08/2016*

- Made a C++ document record management system that helped programmers to easily sort, find, inquire and classify their code based on version, date, and platform;
- Network server & client testing, software performance checking (TCP/IP), wrote server log & construction documents and online-judgment test training.

New Oriental Education & Technology Group — **Shanghai, China**
Teaching Assistant Intern — *05/2015-08/2015*

- Full-time SAT & TOFEL teaching assistant & class manager for total 120 students of 3 classes;

RESEARCH

Intelligent Optics Laboratory, ECE, UIUC — **09/2016-05/2017**

- Built an depth blending algorithm using Matlab to eliminate 3D disorder in Virtual-Reality 3D display;
- Made a two layer virtual reality gear prototype with three undergrads sponsored by Huawei USA;
- Paper: "Optical mapping near-eye 3D display with correct focus cues", Opt.Lett. 42, 24752478(2017).

Web Data Mining: University Career Guide Book — **03/2017-05/2017**

- Build a multi-process & multithread python web crawler with python selenium and get 25,000 public data from UIUC alumni in LinkedIn;
- Analyzed the data with python Panda library, made a research poster displaying ranking, race, demographic, gender, job title etc;
- Got **nominated the best research project** of the year in 2017 UIUC Undergraduate Research Symposium.

PM 2.5 Air Quality Mapping — **03/2016-05/2016**

- Developed an Matlab Image processing software with GUI showing air quality map from remote satellite photos;
- Exhibited the research poster in 2016 UIUC Undergraduate Research Symposium, was interviewed and reported by university website as international student representatives;

Urban Environment Equity, ACE UIUC — **01/2015-05/2015**

- Investigated the effect of Milwaukee water clean-up program leading by Professor Bethany Cutts;
- Interviewed and surveyed local people, coding based on Alta.Ti to manage million lines of text;
- Exhibited the research poster in 2015 UIUC undergraduate Research Symposium;
- Paper: "Issues, Stakeholders, and Equity in Milwaukee's Urban River Management".

PROJECTS

Tic-Tac-Toe Gamebox, Senior Design — **09/2017-12/2017**

- Hardware game box included PCB design&soldering, microprocessor coding, LED module and A/D converter.

Red-pill OS, Computer System — **10/2016-12/2016**

- Built a Linux-like computer system featuring system calls, paging system, file system, scheduler and Interrupt.

lyulyulyu.com, Blog System — **12/2016-02/2017**

- A Ruby on Rail full stack project includes user authentication, CRUD operation, Restful Api and interface design.

HONORS AND AWARDS

- James Scholar Honor Program, College of Engineering, UIUC
- "Initiative Researcher Certification", Living Learning Community, UIUC
- Red-cross First Aid Certification

TECHNICAL SKILLS

- System & Networking: C++, C, JAVA, X86
- Web Development: Ruby on Rails, Node.js, ReactJS, HTML, CSS, JQuery, Javascript
- Research & Digital Signal Processing: Python, Matlab
- Distributed System & Big Data: Scala, Spark, Hadoop