Kehan (Jason) Wang

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Deep-learning enthusiast skilled in ML, Computer Vision and software development.

EDUCATION

Master of Science, Computer Science
University of California, Berkeley
Spring 2022 (Incoming Student)

Bachelor of Arts, Computer Science
University of California, Berkeley
Senior, Spring 2021 GPA: 3.90

COURSEWORK HIGHLIGHT

CS 182: Deep Neural Networks
CS 188: Artificial Intelligence
CS 189: Machine Learning
CS 194-26: Computational Photography
CS 280: Computer Vision
CS 285: Deep Reinforcement Learning

RESEARCH

sensAI
RISE Lab – UC Berkeley

- Robotics: Distribute a drone's central controller work onto four individual propellers with Policy Gradient and Imitation learning on MPC using PyTorch.
- Wavelet: By interleaving different GPU's peaks and valleys in memory usage, our tick-tock training scheduler can achieve >2x speedup.
- Paper accepted by MLSys 2021.

Barcode Detection in High Resolution Images
BAIR – UC Berkeley

- Propose a new detection pipeline using regional proposal to find regions of most barcodes, fully convolutional network for pixel-wise classification, and OpenCV methods for bounding box extraction.
- Faster and more accurate than YOLOv4, Mask-RCNN and state-of-the-art barcode detection models.
- Paper submitted to ICIP 2021.

Multi-modal Semantic Misinformation Detection
BAIR – UC Berkeley

- Detect if a Facebook post matches its video content.
- Use 3D CNN, BERT to extract video, language features, and embed them to the same semantic space to classify if they are a match.
- Self-supervised by learning to predict post reactions.

WORK EXPERIENCE

Software Development Intern
Microsoft - Redmond, WA
May 2020 – Aug 2020

- Developed new features on Microsoft Teams Desktop/Webclient using Angular, Typescript, C#.

Mobile Software Intern
Brilliant Home Technology - San Mateo, CA
May 2019 – Aug 2019

- Implemented new features on Brilliant Smart Home Control mobile app using Kotlin and Swift, with MVVM architecture, ReactiveX programming.

Full-Stack Software Intern
California PATH - Berkeley, CA
Jun 2018 – May 2019

- Developed a transit app that supports bus-user location matching. Implemented using Flask APIs, PostgreSQL and React-Native.

Backend Software Intern
Simpatica Medicine, Inc - Berkeley, CA
Feb 2018 – May 2018

Lab Assistant EE16A/B
UC Berkeley
Jan 2018 – May 2019

PROJECT

Facial Keypoint Detection

- Used ResNet18 and multiple data augmentations. Scored 5th place in class Kaggle competition.

Augmented Reality with OpenCV

- Used Harris corner detector and median flow bounding box tracker to track anchors.
- Draw objects onto the anchor mesh with OpenCV.

HONOR

1st Place Winner of Cal Hacks 5.0
Navii

- 1st place in Cal Hacks 5.0, a 36-hour hackathon with ~2000 hackers, ~250 teams from all over the world.
- *Navii* is an AR mobile app for indoor navigation.

LEADERSHIP

Industrial Relations Chair
Upsilon Pi Epsilon, Nu Chapter
Jan 2020 – Dec 2020

Student Union President
Nanjing Foreign Language School

PROGRAMMING LANGUAGES

Python, Java, C/C++, PyTorch, Tensorflow, Kotlin, Swift, React-Native, GO, JavaScript, SQL, HTML, C#

汪可涵

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热爱深度学习，专注于计算机视觉。

教育背景

加州伯克利大学
硕士 – 计算机科学
2022 春季毕业
本科 – 计算机科学与数据科学双专业
2021 春季毕业，GPA 3.90

相关课程

CS 182: 深度学习
CS 188: 人工智能
CS 189: 机器学习
CS 194-26: 计算机视觉入门
CS 280: 计算机视觉
CS 285: 深度加强学习

研究项目

sensAI

RISE Lab – 加州伯克利大学

- 机器人控制：用 Policy Gradient, MPC Imitation Learning 将无人机的一个中央控制器分布到四个螺旋桨上。
- 深度学习加速: 通过交错 GPU 内存使用率的波峰与波谷，使神经网络训练时间加速两倍。
- 论文被 MLSys 2021 收录。

大图中的极小条形码检测

BAIR – 加州伯克利大学

- 使用改良的 Regional Proposal Network 来找条形码多的区域，用 Fully Convolutional Network 来做语义分割，最后使用 OpenCV 来画定界框。
- 比 YOLOv4, Mask-RCNN 更快，更准确。
- 论文提交到 ICIP 2021。

多模态文义误传检测

BAIR – 加州伯克利大学

- 检测一个脸书推文是否符合其视频的内容。
- 使用了 3D CNN 和 BERT 来获取视频和语言的特征，并将他们 embed 到相同的语义空间，以确认是否符合。
- Self-Supervision: 通过预测推文的点赞程度。

获奖荣誉

Cal Hacks 5.0 第一名

- Cal Hacks 5.0 是一个基于伯克利的 36 小时编程马拉松。参赛的有 2000 余人，~250 个团队。

工作经历

软件开发实习生

微软
Redmond, WA
2020. 05 – 2020. 08

- 在 Microsoft Teams 的桌面和网页端上开发了新功能。
- 使用了 Augular, Typescript 和 C#。

移动应用开发实习生

Brilliant Home Technology
San Mateo, CA
2019. 05 – 2019. 08

- 在 Brilliant 智能家居 Android 和 iOS 端开发了新功能。
- 使用了 Kotlin, Swift, MVVM 和 Reactive Programming。

全栈实习生

California PATH
Berkeley, CA
2018. 06 – 2019. 05

- 开发了一个公共交通 APP。支持人与车的切合定位。
- 使用了 Flask API, PostgreSQL 和 React-Native。

后端开发实习生

Simpatica Medicine, Inc
Berkeley, CA
2018. 02 – 2018. 05

- 为了给研究艾滋病药用反应的机器学习增加数据输入，开发了一个可扩展的 Docker 后端。

EE16A/B 实验室助理

UC Berkeley
2018. 01 – 2019. 05

课程项目

脸部要点检测

- 使用了 ResNet 18 和多样数据增强，在班级 Kaggle 比赛中获得第五名。

OpenCV 增强现实

- 使用了 Harris Corner Detector 和 Median Flow bounding box tracker 来追踪锚点。
- 用 OpenCV 于锚点网上画物体。

领导经历

产业关系部长

Upsilon Pi Epsilon, Nu Chapter (伯克利荣誉CS学会)
2020. 01 – 2020. 12

学生会主席

南京外国语学校国际部

编程语言

Python, Java, C/C++, CUDA, Pytorch, Tensorflow, Kotlin, Swift, React-Native, GO, JavaScript, SQL, HTML, C#