

# Chien-Hsuan “Joshua” Chang

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## EDUCATION

### University of Illinois at Urbana-Champaign

*B.S. Computer Science and Music, Class of 2023 (3.92 GPA, 3-time Dean's list)*

Urbana-Champaign, IL  
Aug '19 - Present

## WORK EXPERIENCES

### Courtero - The Best Basketball Community App

*Engineering Lead*

Sept '21 - Present

- Co-founded basketball community mobile application startup
- Led user interface design and engineering development
- Created skill rating system with simulation-based machine learning
- Led collaboration with key stakeholders and business development
- Accepted into Harvard Innovation Labs' Spring Venture Program

Relevant Skills: JavaScript, React Native, Machine Learning, Learning to Rank, PyTorch, IT Communication

### Taiwan AI Labs

*AI Intern*

Taipei, Taiwan  
May - Aug '20, Jun - Aug '21

- Conducted independent research on automatic music generation with Prof. Yi-Hsuan Yang of Academia Sinica
- Invented piano performance analyzation with computer vision integrated into Transformers
- Created algorithms that optimizes harmonic and rhythmic recognition in MIDI
- Developed algorithms into PyPi packages *chorder* and *groover*, led into 25,000+ and 10,000+ downloads; referenced in AAAI publication ([ojs.aaai.org/index.php/AAAI/article/view/16091/](https://ojs.aaai.org/index.php/AAAI/article/view/16091/))

Relevant Skills: Algorithms, Machine Learning, Computer Vision, TensorFlow, Transformers Python

### CS/ECE 374 (Introduction to Algorithms & Models of Computation)

*Course Assistant*

Urbana, IL  
Aug - Dec '20

- Mentored 50+ students to improve their academic success
- Designed a systematic approach to stimulate students' learning interest

Relevant Skills: Education, Algorithms, Communication

### U18 Jazz Band

*Pianist, Keyboardist, Composer, Arranger*

Taipei, Taiwan  
Mar '19 - Present

- Won U18's 2020 Taipei Jazz Festival performing opportunity with audience of over 42,000
- Coordinated and produced U18's 2020 New Taipei Rising Stars concert
- Performed non-profit for organizations such as Taiwan Railways Administration and Raising Foundation for Pediatrics

Relevant Skills: Event Programming, Public Performance, Music Composition and Arrangement

## SKILLS & COURSEWORK

- Programming Languages: Python, C, C++, Java, JavaScript
- Machine Learning: Scikit-learn, Tensorflow, PyTorch
- Application Frameworks: JUCE, React Native
- Computer Science Coursework
  - Data Structures
  - Algorithms & Models of Computation
  - Computer Architecture
  - Probability & Statistics
  - Numerical Methods
  - Systems Programming
  - Programming Languages & Compilers

## AWARDS

- First Prize, 2019 Taipei Municipal Science and Engineering Fair
- Innovation Award of Beijing Institute of Technology, 2019 China Adolescents Science & Technology Innovation Contest
- Silver Award, 2019 China Adolescents Science & Technology Innovation Contest
- 2019 Taiwan National Science and Engineering Fair: Finalist