

# MINGKAI CHEN

Stony Brook, NY

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## EDUCATION

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Stony Brook University

*B.Sc. - Computer Science Honors Program*

Aug 2020 – May 2024

*Stony Brook, NY*

Southern University of Science and Technology

*Visiting Student*

Aug 2020 – Jun 2021

*Shenzhen, China*

## UPPER-DIVISION COURSES

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- Computer Vision
- Machine Learning
- Natural Language Processing
- Theory of Computation: Honors
- Analysis of Algorithms: Honors
- Probability and Statistics
- Software Development
- Computer Networks
- Systems Fundamentals

## EXPERIENCE

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Department of Computer Science, Stony Brook University

*Student Assistant*

Dec 2022 – Present

*Stony Brook, NY*

- Develop and maintain numerous websites and servers within the department through technology stacks including JavaScript, PHP, CSS, MySQL, etc.
- Skills: **MySQL** · **PHP** · **Cascading Style Sheets (CSS)** · **JavaScript**

## RESEARCH

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**Object Detection of Human-hold Handguns in Surveillance Images**

- Under the supervision of [Prof. Haibin Ling](#) [↗](#).
- Status: Ongoing Research
- Abstract: Thanks to the work of [CCTV-Gun](#) [↗](#), we were able to conduct research in the important scenario of handguns detection in surveillance images. We aim to enhance the performance of handguns detection by studying the Human-Object Interactions between the handgun and the holder.
- Skills: **Research** · **Computer Vision** · **Human-Object Interaction** · **Object Detection**

**Large and Fundamental Model to Address Various DNA and RNA Related Tasks**

- With collaborators from University of Rochester, Harvard University, and City University of Hong Kong.
- Status: Ongoing Research
- We aim to design a large and fundamental model using extensive data for DNA and RNA mutations, in order to address various DNA and RNA related tasks.
- Skills: **Research** · **AI for Science** · **Bioinformatics**

**Aggregation of Disentanglement: Reconsidering Domain Variations in Domain Generalization** [↗](#)

- Authors: Daoan Zhang<sup>1</sup>, **Mingkai Chen**<sup>1</sup>, Chenming Li, Lingyun Huang, Jianguo Zhang.
- Status: Peer-Reviewing
- Abstract: We proposed a new perspective to utilize class-aware domain variant features in training, and in the inference period, our model effectively maps target domains into the latent space where the known domains lie. We also designed a contrastive learning based paradigm to calculate the weights for unseen domains.
- Skills: **Research** · **Computer Vision** · **Domain Generalization**

## TECHNICAL SKILLS

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**Languages:** Python, Java, C, C++, Swift, Julia, HTML, JavaScript, etc.

**Developer Tools:** VS Code, XCode, Github, Nginx, etc.

**Technologies/Frameworks:** PyTorch, OpenCV, Git, Docker, ROS, Cloudflare Workers, React, etc.

## CERTIFICATIONS

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- **iOS Development** - CodePath [↗](#)
- **Rainbow (LGBTQ+) Law Training Workshop** - Faculty of Law, The University of Hong Kong [↗](#)

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<sup>1</sup>Equal contribution.