Tianyu Zhang

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| https://tianyuzhangartportfolio.wordpress.com

Research Interests

My research interests include topics in **HCI** (AR/VR, Inertial Odometry, Ubiquitous Computing, Collaboration).

Education

University of Toronto   *Toronto, Canada*

HBSc in Computer Science   *Sept 2019 - Current*

- **Programs:** Computer Science Specialist, Mathematics Minor, Philosophy Minor, Focus in Artificial Intelligence, Focus in Game Design
- **GPA:** 3.8 / 4.0

Work Experience

Huawei Technologies Canada Co., Ltd.   *Markham, Canada*

HMI Lab Assistant Engineer   *Jul 2022 - Jul 2023*

- Developed sensor based prototypes to enhance user's experiences on smartphones and on-body devices (smartwatches, smart glasses, etc.).
- Applied for patents and filled in invention disclosure forms.
- **Research Skills:** Replicated and improved algorithms from past papers, designed and conducted human subject studies, literature review.
- **Technical Skills:** Java, Kotlin, Python with Pandas, Librosa, SQL, C++, MQTT, UDP, Git, VINS-Fusion, Linux, Android Studio, Data Collection, Data Analysis, Audio Processing (spectrograph, FFT, etc.), Arduino, Raspberry Pi, UWB, GPS, IMU Sensor Fusion, Inertial Odometry.
- **Soft Skills:** Teamwork, time management, communication, presentation.

Beijing Sunac Nebulape Technology   *Beijing, China*

Front End Developer Intern   *May 2021 - Aug 2021*

- Developed SUNAC C&T CLUB WeChat, Alipay Mini Program and HTML5 pages with 100, 000+ users.
- Implemented functions including comment list, product list, coupon detail, and check in calendar.
- **Technical Skills:** WXML, WXSS, Vue.js, JavaScript ES6, RESTful API, Git.
- **Soft Skills:** Teamwork, communication, front end, UI design.

Research Experience

University of Toronto, Dynamic Graphics Project Lab   *Toronto, Canada*

Undergraduate Research Assistant   *May 2023 - Current*

- **Blending Mixed Reality Workspaces for Remote Collaboration**
- Research on HCI at Professor Tovi Grossman's lab under the supervision of Dr. Ludwig Sidenmark.
- Paper to be submitted to **CSCW2024**.
- **Research Skills:** Literature Review, Prototype Implementation, User Study, Paper Writing, Presentation.
- **Technical Skills:** Unity, C#, Git, LaTeX, Gesture Retargeting, Inverse Kinematics.

University of Toronto, Forcolab   *Toronto, Canada*

Undergraduate Research Assistant   *May 2022 - Current*

- **Investigating Collaboration Challenges Between Software Engineers and UX Designers**
- Research on software engineering at Forcolab under the supervision of Professor Shurui Zhou.
- Paper submitted to **FSE2024**.
- **Research Skills:** Systematic Literature Review, Open Coding, Paper Writing.
- **Technical Skills:** GitHub / GitLab APIs, GH Torrent, Python, LaTeX.

Publications

Peer Reviewed Conferences

Shutong Zhang, **Tianyu Zhang**, Jinghui Cheng, Shurui Zhou. *Who to Blame: A Comprehensive Review of Challenges and Opportunities in Designer-Developer Collaboration*. Submitted to ACM International Conference on the Foundations of Software Engineering (FSE) 2024.

Translation

Xuan Qi, **Tianyu Zhang**. *The Midlife Mind: Literature and the Art of Ageing (Chinese Edition)*. ISBN 978-7-5184-3608-8. China Light Industry Press, 2021.

Patents

PENDING

Qiang Xu, Ting Li, Zhe Liu, Chenhe Li, **Tianyu Zhang**. "*Using On-Body Microphone to Improve User Interaction with Smart Devices*". CN Patent Application No. PCT/CN2022/143796, Dec. 2022. Beijing: China National Intellectual Property Administration.

Presentations

POSTER PRESENTATION

Exploring Challenges and Good Practices in UX Designer-Developer Collaboration: A Systematic Literature Review. University of Toronto Undergraduate Engineering Research Day, In-person, Toronto, Canada, Aug 2023. [pdf]

CONFERENCE PRESENTATION

PEY Experience at A R&D Department PEY Co-op Edge Conference, In-person, Toronto, Canada, Sept 2023.

Academic Services

CONFERENCE REVIEWER

Sub-Reviewer: FSE2023, ICSE2024

Skills

Programming	Python (Pandas, PyTorch, NumPy, Scikit-learn, Librosa, psycopg2. etc.), C#, Unity, Java, Kotlin, C, C++, SQL, JavaScript ES6, HTML5, CSS3, XML, Vue.js, RESTful API, MIPS Assembly Language.
Research Skills	Systematic Literature Review, Designing and Conducting Studies, Paper Writing.
Miscellaneous	Linux, Shell (Bash), Git, SSH, MQTT, Android Development, LaTeX, Heroku, Mongo DB, Microsoft Office, Figma, Adobe PhotoShop, Procreate, iMovie, Keynote.
Soft Skills	Presentation, Leadership, Fast Learner, Time Management, Teamwork, Problem-solving, Documentation, Communication.
Languages	Chinese(Native proficiency), English (Full professional proficiency), German (Elementary proficiency), Japanese (Elementary proficiency).

Awards & Scholarships

2023	**Dean's List Scholar**, University of Toronto Faculty of Arts & Science	*Toronto, Canada*
2023	**Department of Computer Science Research Award ($7500)**, University of Toronto	*Toronto, Canada*
2023	**Ubisoft Toronto Next 2023 Game Design Finalist**, Ubisoft Toronto	*Toronto, Canada*
2022	**The Regents In-Course Scholarship ($1000)**, Victoria College	*Toronto, Canada*
2022	**Dean's List Scholar**, University of Toronto Faculty of Arts & Science	*Toronto, Canada*
2021	**The George W. Edmonds Scholarship ($1000)**, Victoria College	*Toronto, Canada*
2021	**Dean's List Scholar**, University of Toronto Faculty of Arts & Science	*Toronto, Canada*
2020	**The R Malcolm Hill Scholarship ($1000)**, Victoria College	*Toronto, Canada*
2020	**Dean's List Scholar**, University of Toronto Faculty of Arts & Science	*Toronto, Canada*
2019	**University of Toronto Scholar ($7500)**, University of Toronto	*Toronto, Canada*
2018	**International Team Finalist**, International Mathematical Modelling Challenge	*Hong Kong, China*

Interests

Music	Piano (Shanghai Conservatory of Music Amateur Performance Level 10, Advanced Music Theory), Electirc Bass, Flute, Melodica.
Visual Arts	Wood Print Making, Oil Painting, Movies, Installation, Photography.
Reading	Literature, Philosophy, Science Fiction.
Sports	Japanese Martial Arts (Kyudo Shodan, Kendo, Naginata), Compound Bow Archery, Fitness.
Video Games	AAA and Indie Games Gamer.