Karolina Tchilinguirova

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Education

York University BSc in Computer Science   Expected: Dec. 2025
- **GPA:** 3.5/4.0
- **Awards:** Three-time recipient of the Lassonde Undergraduate Research Award ($24,300)

Queen's University BSc in Geological Science   Graduated: Dec. 2019
- **Certificate** in Geographic Information Sciences

Experience

Citation Bias Research Assistant / **Full Stack Developer**, DARE! Lab at York University   May 2024 – Current
- Leading the development of **CiteFairly** (see Projects), a research-driven web tool that empowers academics to detect and mitigate gender citation bias. Responsible for project architecture, feature planning, and integration of bibliographic data pipelines using **React**, **Tailwind CSS**, **Node.js**, **Firebase**, and external APIs.
- Conducted a large-scale citation analysis on over 90,000 papers from leading software engineering journals, revealing a growing gender citation imbalance since 2009.
- Leveraged **Python**, **R**, and **MongoDB** for data processing, bootstrapping, and demographic classification.
- Presented research findings at the **2024 Lassonde Undergraduate Research Conference** and **CAN-CWIC 2024**.
- Open-source repository: **[GitHub]** Preprint available on: **[arXiv/2410.02801]** Tool demo: **[CiteFairly]**

Full Stack Next.js Developer Intern, MekTek Software Solutions & Engineering   Feb 2024 – Mar 2024
- Completed a 60-hour Riipen Level UP internship, developing a video interview web app that allows employers to create custom interview applications, assign applicants, and select customized questions.
- Implemented a system where applicants receive unique URLs containing their assigned questions, record video responses, and automatically submit them to employers.
- Built an admin dashboard for employers to track application progress, view submitted videos, and access applicant information.
- Developed the full-stack application using **Next.js**, **Firebase Firestore**, and **Firebase Storage**.

Geospatial Machine Learning Researcher (Award Recipient), GNSS Lab at York University   May 2023 – April 2024
- Research focus on **exploring AI applications in Global Navigation Satellite Systems**
- Utilized **Python** to conduct analyses and leveraged Machine-Learning package **Scikit-learn** to classify the quality of smartphone positioning data points to 92% accuracy.
- Presented an independent summer project at the Lassonde Undergraduate Research Conference. **[Research Poster]**
- Collaborated with a post-doc and a PhD candidate to co-author a conference paper.

Publications

Improving Smartphone Positioning by Adapting Measurement Noise Covariance using Machine Learning   Sept 2024
Anurag Raghuvanshi, *Karolina Tchilinguirova*, Soroush Sasani, Sunil Bisnath   10.33012/2024.19761

Projects

CiteFairly - Citation Bias Mitigation Tool   Live Demo
- Developed a web tool that assists researchers in analyzing the gender diversity of their reference lists, generating citation diversity statements, and recommending related articles to help mitigate citation bias.
- Built the backend using **Express - Node.js** and **Google Firebase Realtime Database + Storage** to manage and persist user-submitted reference data. Designed a responsive front end with **React** and **Tailwind CSS**.
- Integrated multiple external JavaScript libraries and APIs—including **Bibliography.js**, **Citations.js**, **OpenAlex API**, **Semantic Scholar API**, and **Gender-API**—to parse references, retrieve bibliographic metadata, identify author genders, and suggest relevant publications.

eCommerce Store   GitHub   Live Demo
- Developed an eCommerce Store with product pages, shopping carts, user accounts, and admin panel using **React**, **TypeScript**, and **Tailwind CSS**.
- Built a dynamic store catalog using **Flask** and **MongoDB**, serving images from an **Amazon S3 Bucket**.

Technologies

Languages: Python, R, Java, SQL, JavaScript, TypeScript
Frameworks & Libraries: Node.js, Express, Flask, Spring Boot, React, TailwindCSS, Next.js, Three.js
Databases & Platforms: MongoDB, Firebase, Render, Vercel, Google Cloud Platform, PostgreSQL, PostGIS, Microsoft Azure DB
Development Tools: Linux, Git, GitHub, Figma