Martin Szyld

Software Developer, PhD in Mathematics

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STATEMENT OF GOALS

I am looking for a full-time position where my expertise in Software Development and Mathematics can be applied to real-world problem solving using advanced techniques.

WORK EXPERIENCE

Software Developer at Arcturus Studio, Halifax, Canada .... 2023 – Present

- Completed, deployed, and maintained a full-stack web application used by clients to work with their 3D clips library. Features include organizing the library into projects, creating thumbnails from video previews, and generating graphs with clip view statistics by date. Restructured parts of the database for 10x faster retrieval of large data for clients with over 1000 clips (link to demo video).

  Tech: ⚛ React   ⬢ Node.js   🐘 PostgreSQL   ⓒ Cypress   aws AWS   D DatoCMS

- Added a major feature to the latest release of the company's flagship desktop application, consisting of a customizable library of presets that can be used to generate and calibrate a volumetric video processing pipeline 8.9x faster according to design study (link to demo video).

  Tech: C++   Qt Qt

- Maintained many of the company's multi-platform applications and website by fixing bugs, adding features, updating legacy code, and providing fixes for clients' issues.

  Tech: Js Javascript   ⓤ Unreal Engine   ✪ Unity for Android/iOS   ⊘ AWS Lambda

- Built an interactive WebAR experience to educate people on volumetric video technology. Created 3D animated special effects and synchronized them with playback of holograms.

  Tech stack: ▽ Three.js   8 8thWall

AARMS Postdoctoral Fellow at Dalhousie University, Halifax, Canada .... 2020 – 2022

- Conducted research in mathematics, working in collaboration and as a supervisor. Published papers in top-tier academic journals such as Advances in Mathematics. Gave presentations at scientific meetings worldwide, many by invitation. Supervised students on research projects.

  For details of my 10+ papers and 25+ talks see my math webpage: www.mathstat.dal.ca/~mszyld

Assistant Professor at Dalhousie University, Halifax, Canada .... 2021 – 2022

- Designed and taught a Geometry course twice. Did a 100-page set of class notes (link to notes), received a 4.39/5 score in students' feedback and a 5/5 score in RateMyProfessors (link to reviews).

Postdoctoral and Doctoral Fellow at Universidad de Buenos Aires, Argentina .... 2010 – 2018

- Conducted research first under supervision, then in collaboration and independently. Gave conferences and a short course at international meetings. Taught over 20 university undergraduate and advanced graduate math courses. Average rating from students: 4.44/5 (link to results).

OTHER SKILLS AND QUALIFICATIONS

- Coding competitions: Ranked top 500 worldwide in Google Kickstart last round (top 20 in Canada) in 2022, ranked top 5% in Leetcode contests site.

- Completed Harvard's CS50 Introduction to Artificial Intelligence course (link to certification) and FreeCodeCamp's Data Analysis and Scientific Computing certifications, (link to certifications). The 22 projects required for these certifications used Python packages Numpy, Pandas, SciPy, and TensorFlow and are available in ⚙ mszyld

- Designed and built my math research webpage using TypeScript, Angular, and Ionic components.
- Completed Google's foo bar challenge using Python and published explained solutions as Jupyter Notebooks (link to solutions).
- Contestant, trainer, and organizer of multiple mathematics and coding competitions. Ranked top 10 in Argentina several times, and worked as a trainer for these competitions during 5 years.
- Well-developed communication skills: member of multiple research teams, worked with other developers, designers, and directly supported clients.
- Outstanding presentation skills: delivered over 25 talks at scientific meetings, taught over 30 university courses, and showcased my work as a developer for the whole company.
- Familiar with agile project management, sprints, epics, and stand-up meetings.

EDUCATION

- Ph.D. in Mathematics, Universidad de Buenos Aires, Argentina. GPA: 4.0/4.0 2015
  Certified in Canada as an Earned Doctorate (link to certification).
- Master's in Mathematics, Universidad de Buenos Aires, Argentina. GPA: 4.0/4.0 2009
- Technical High School Diploma in Computer Science, ORT School, Argentina. GPA: 3.52/4 . . 2001

LANGUAGES

Fluent in English (IELTS 8.0/9.0) and French (TEF C1/C2), native proficiency in Spanish.

STATUS IN CANADA

- Permanent Resident since 2021.

OTHER INTERESTS

- Board and card games, Dominion, MTG, Go.
- Guitar, piano, and swing dancing.
- Nature, camping, and hiking.
- Personal finance and tax optimization.

REFERENCES

- Devin Horsman, Chief Technology Officer (CTO) at Arcturus Studio.
- Robert Butler, Senior Software Developer at Arcturus Studio.
- Nathan Christensen, Senior Mobile Engineer at Lumenalta.
- Pablo Ariel Heiber, Software Developer at Google.
- Dorette Pronk, Professor at Dalhousie University.

Contact information and further references are available upon request.