# Amrinder Bhogal

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## PROJECTS

**Drawing Review AI:** co-supervised collaboration between Crozier and UofT ML students to develop AI solution reviewing pipe coverage on engineering drawings; presented successful prototype within 4 months

**CCTV AI Review:** co-led project between Crozier and UofT students to create automated CCTV review system using open data models; guided process and identified key factors affecting defect detection

**Due Diligence AI:** successfully secured project funding after pitching and building an initial AI model for targeted city to assist engineers with due diligence; model collected data and generated reports on serviceability

**Project Forecasting Tool:** implemented Excel database to track ongoing Crozier projects and weekly workloads including forecasting future workloads, streamline productivity, and support data-driven decisions for resource allocation

## SKILLS

**AutoCAD Civil 3D:** grading, servicing, esc, and stormwater design, including drafting detailed engineering drawings

**AutoLISP:** scripting and automating workflows using LISP and action routines

**Ajera**: project management and tracking

**BlueBeam:** drawing reviews and markups, image drafting, custom library creation

**Excel/PowerPoint/Word/G-Suite:** composing RFPs/proposals, copywriting/editing, VBA, data manipulation/graphing, pivot tables

**Visual Otthymo (VO):** pond sizing, pre and post development modelling

**OpenAI & CoPilot**: customized agents/GPTs, prompt engineering, scheduled tasks.

**Python**: basic programming, data structures, API integration

## EDUCATION

**Bachelor of Environmental Engineering (B. Eng.)**
*University of Guelph*

## CERTIFICATIONS

**Part 8 OBC: On Site Sewage Systems**
Inspector/Installer Course (Certificate)
*University of Guelph*

## EXPERIENCE

**C.F. Crozier & Associates Inc. (Crozier) | Engineer-in-Training**
*Guelph & Bradford, Jan 2022 – Current*

*As an Engineer-in-training:*
- Designed servicing and grading plans for various residential, commercial, and industrial developments as part of a three-person team, contributing to zoning by-law amendment, draft plan of subdivision, and site plan approval applications.
- Prepared and submitted over 25 technical documents, including Environmental Compliance Approvals (ECAs), Functional Servicing Reports (FSRs), Stormwater Management Reports (SWMRs), and Due Diligence Memos, ensuring compliance with project requirements.
- Drafted 20+ project proposals, assisting with pricing, budgeting, and scheduling, contributing to successful bids and project acquisitions.
- Under the supervision of a P.Eng., designed over 15 on-site septic systems, classified as small and large under the Ontario Building Code, including drafting designs, preparing technical briefs, and conducting site assessments to evaluate existing systems and monitor new construction.
- Conducted 20+ field visits to oversee construction, verify site conditions, respond to RFIs, and prepare comprehensive site reports; performed quantity take-offs and ensured compliance with design specifications.
- Authored an innovation report identifying key technological gaps in engineering workflows, leading to contributions in the company's AI-driven initiatives.

*As a co-op student:*
- Assisted in preparing 15+ development applications, by drafting drawings and reports, and performing engineering calculations.
- Presented annually at Crozier's Co-op Information Night at the University of Guelph, engaging with students and providing industry insights on behalf of the company.

**Exco Technologies Limited (Co-op) | CAD Programmer**
*Markham, May 2021 – Nov 2021*
- Managed excel database of over 150 customer CAD orders, verifying quality and dimensions for accuracy and organization
- Improved the manual data collection process for over 70 unique extrusion dies by automating data entry and analysis using custom-built Python and AutoLISP scripts, tracking 30+ key metrics for die performance.
- Reviewed drafts drawings of extrusion dies, identified discrepancies, and reported findings to the supervising manager