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Building Your Career

Industry Internship Projects

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What is a career?

- A series of **projects** in which new **skills** are learned, **experience** is gained in **roles** that develop **your authority** in **your area of expertise**
- Projects are done in **teams**
- Projects have a **context** and must **integrate with or interface to systems** (processes, technology, information, organizations, legal)
- Projects have a **business purpose** and generate **value**
- Projects have a **focus**

Who are you as a Professional?

- **What do you look like?**
 - **Digital footprint** (LinkedIn, GitHub, Social Media, Blogs ...)
 - Resume
- **Who are your colleagues?**
 - Classmates, co-workers, **network**
 - How do you stay in touch? ... Facebook / Whatsapp?, Slack / Teams?, Events / Workshops?
- **What professional groups are you a member of?**
 - Professional Development Club, Student Association, IEEE, Volunteer Organizations
- **What do you do? (job, roles, contributions)**
- **What do you know? (skills, specializations, responsibilities)**
- **How do you know it?**
 - **Project Experience**
 - Education (Academic and Industry)

Match your Resume to your target Job Description

- **Contact Information (name, email, phone number, NO ADDRESS)**
 - **Digital footprint** (LinkedIn, GitHub, Social Media, Blogs ...)
- **Skills**
 - What does the **job description** list (acronyms, technical jargon, concepts)?
 - **What do you know?** (skills, specializations, responsibilities)
- **Experience *****
 - **Project Experience**
 - **What do you do?** (**job**, roles, contributions, **skills**, specializations, responsibilities)
 - **Network**, Events / Workshops, Volunteer Organizations, **professional groups**
- **Education** (recognition, awards, certificates, degrees)
 - Industry
 - Academic

How do I find an industry partner ... to hire me?

- **Do you know what your target industry cluster is?**
 - Do you know what websites, conferences, trade journals/magazines the cluster uses to network?
 - Do you know **who in your network** and who at uOttawa is connected with the cluster?
 - Do you know how you can be active in your target industry cluster?
- **Do you know what organizations / companies you are targeting?**
 - Better yet do you know which organizations are targeting YOU!?
 - How do they communicate with you? (web presence, events, linkedIn, Job postings, head hunters career center)
 - What **roles / jobs / projects** are available at a target organization? How can you research this?
- **Do you know what skills and experience they are looking for?**
 - How can you acquire them?
 - How do you **communicate to your target organization**? (web presence, your network, your references, your promoters, resume, interview)
- **Why should they hire you?**
 - What is **your pitch**? Why **are you the right person** for the job/project? What is your **value** (to them)?

How do I find a Supervisor (mentor, promoter, reference)?

- **Do you know how to meet the right professors?**
 - Courses and Research and their students (program seminars where thesis students present!)
 - Program Associations and Program Coordinators
 - Engineering Events (CEED, Orientation, Bulletin); Ottawa Industry Events
 - **Do your research!** (faculty web pages, google, google scholar)
- **Do you know how to communicate with professors?**
 - In person (when, where) or by email (how should such an email be worded)
 - Do you know how to **efficiently** ask for and get an appointment scheduled?
- **Do you know what professors are interested in?**
 - Do you know what industry clusters, organizations / companies the professor is interested in?
 - Do you know what **skills and experience** they are looking for?
 - Do you have the skills and experience they are looking for?
- **Why should they hire you?**
 - What is **your pitch**? Why **are you the right person** for the job/project? What is your **value** (to them)?

Build experience through projects ...

- **Projects are simple to find, but challenging to do right, and even harder to follow through to success on.**
- **A project is much more fun, if you are part of a team, working for a client you are trying to satisfy.**
- **A project always has a context (what is your context?)**
 - what is in scope, what is out of scope
 - interface with existing infrastructure
 - interact with key contacts (people)
 - leverage whatever available tools and knowledge might be useful.

How Do I Find a Project?

- **UNIVERSITY COURSES**
 - GNG5120, GNG5140 ... any course with projects,
- **ONLINE COURSES or INDUSTRY WORKSHOPS**
- **VOLUNTEER – PROFESSORS**
 - CREATE PROJECTS (E.G. www.create-best.com)
- **VOLUNTEER – CEED**
- **NETWORK – Professional Development Club, Sawsan, Mana**
 - City of Ottawa (Farzaneh, Patricia, Simardeep, Ajay)
 - University of Ottawa Digital Challenge (Astha)
 - This years projects: Aedo (Yiling), Siemens (Ephrem Nisrane), NLP (Prof. Arya)
 - Student Associations, Clubs, Womens Innovation Network, Startup Garage ...
- **NETWORK – Industry Clusters, Professional Associations**
 - www.cengn.ca (Bamdad Mousavi)
 - Contact and invite companies, alumni to do an event or information session

Industry Clusters

- **Data Science / AI**
 - Aedo.ai (Construction Industry – relevant to Civil Engineering as well)
 - Startups and Consulting firms
 - Kanata Business Association
- **Networks and Cloud Computing DevOps**
 - CENGN, Cisco, Kanata
- **City of Ottawa**
 - Mobile, Data Science, Civil, Environmental, Biomedical
- **Biomedical**
 - www.create-best.com
- **Security, Electric / Autonomous Vehicles, Gaming, Oil Industry, HVAC, ...**

How do I define / register to GNG5902?

- **ELG / GNG 5902 Industry Internship Project needs an approved proposal**
- <https://www.site.uottawa.ca/~lpeyton/gradproject/> Can be used for ELG / GNG5902 or Discipline Specific Project Code or to plan any project
 - Proposal
 - Industry Partner
 - Supervisor
 - ELG / GNG 5902 Projects Coordinator
 - Program Approval (Service Request)

What is a project?

- **A project can be an organized attempt to engineer a solution to a problem**
 - Engineering design process:
<https://www.instructables.com/id/What-Is-the-Engineering-Design-Process/>
- **A project can be a creative approach to improving user experience**
 - Design thinking:
<https://www.interaction-design.org/literature/topics/design-thinking>
- **A project can also be a systematic approach to researching the literature, collecting data, comparing cases to identify and evaluate possible solutions**

What is a successful project?

- **Value proposition**

- What benefits will your project provide to who and how will you achieve it ... and how will you demonstrate / measure that you have achieved it
- Define, Evaluate, Measure, Build

<https://www.forbes.com/sites/michaelskok/2013/06/14/4-steps-to-building-a-compelling-value-proposition/#57b6c1214695>

- **Minimum Viable Product**

- Minimum set of features, or the essential functionality that a product needs to provide to be useful to customers; to get feedback for the next iteration.
- The essential feature(s) that guarantee success if present, failure if absent

<https://medium.com/@sprocompany/what-is-a-minimum-viable-product-and-how-to-build-an-mvp-for-your-startup-9a02c0d4a56a>

- **Evaluation Criteria**

- What are the criteria for success? How will they be measured?

How Do I plan the project?

- **Duration and Effort**

- Target Minimum 240 hours ... max 360
- Usually 1 semester - 12 weeks @20 hours a week (university budgets that students spend 10 hours per week for a 3 unit course) ... but could be 24 weeks @ 10 hours a week, could be 6 weeks @ 40 hours a week. **Be clear.**

- **Specify Expected Results**

- Define what you need to deliver at the end of the project to satisfy your client.
- Define how it will be evaluated and progress tracked. Deliverables (intermediate and final results) and Grading Scheme.

- **Define a Week by Week Schedule**

- Work backwards from the end result and list week by week what tasks will be performed or what milestones (intermediate results) will be achieved
- Track your progress week by week throughout the project (an update schedule to keep it real.

How am I evaluated

- **Your Supervising Professor is responsible for informing me or the graduate office of your final grade**
 - Depending on the project each Deliverable that was identified in the Project Proposal could be evaluated by either the industry partner or the supervisor.
 - EXCEPT there must be a [project report](#) worth 30-60% of the final grade that is graded by the Professor
 - And there must be an [internship evaluation form](#) that is worth 10-30% that is filled in by the Industry partner
- **Projects can be done by a team of students**
 - Each student has a separate project proposal that clearly identifies their role on the project, and what part of the project they do entirely on their own.
 - Each student does their own project report and has their own internship evaluation
 - But their can be common parts of the project infrastructure (and intermediate deliverables) that are a group effort and a group mark.
- **NOTE: Individual projects also specify their “team” (key contacts they interact with), as well as identify the tools and resources and existing infrastructure that is part of the project context.**



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