

Selecting a Capstone Project Topic

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Quick-reference guide for students, advisors, and project managers

1. Why the Topic Matters

Benefit	What it Means for You
Relevance	Aligns with current industry trends, research gaps, or community needs.
Motivation	A compelling topic sustains effort over months of work.
Career Impact	Demonstrates expertise to employers or graduate programs.
Feasibility	Balances ambition with the resources and time you have.

2. Core Criteria Checklist

Criterion	Questions to Ask	Red-Flag Indicators
Interest & Passion	Does the subject excite you? Can you see yourself talking about it for hours?	“Just need a grade” feeling; no personal connection.
Scope & Scale	Is the problem narrow enough for a semester?long effort but broad enough for depth?	Topic too vague (“Improving education”) or too huge (“Design a nationwide health system”).
Originality	Will you add new knowledge, a novel application, or a unique synthesis?	Pure replication of a well-known case study without new insight.
Resources & Data	Are data, tools, labs, or mentors readily available?	Required dataset is proprietary and inaccessible.
Skill Fit & Growth	Does the project use your strengths while letting you learn new techniques?	All required skills are already mastered (no learning) or all are completely unknown (no chance to acquire).
Impact & Audience	Who benefits? Academic community, industry, NGOs, or the public?	No clear stakeholder or benefit.

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Criterion	Questions to Ask	Red?Flag Indicators
Ethical & Legal Viability	Are there IRB, copyright, or safety concerns you can address?	Unclear consent procedures or prohibited data use.

Use this checklist early to prune ideas before committing.

3. Idea?Generation Strategies

Method	How to Apply	Example Output
Brainstorming + Mind?Map	Write a central theme (e.g., “Sustainable Transportation”) and branch into sub? areas, technologies, policies, case studies.	Electric?bus fleet optimization, bike?share demand forecasting, lifecycle assessment of EV batteries.
Literature Gap Hunt	Scan recent review articles (last 2?3 years). Highlight “future work” or “open questions.”	“How does edge?computing affect latency in autonomous vehicle platoons?”
Industry Scouting	Browse job boards, company R&D pages, hackathon themes, or professional association newsletters.	“AI?driven predictive maintenance for wind turbines.”
Problem?Based Inquiry	Talk to community groups, NGOs, or campus services. Identify pain points they can’t solve internally.	“Improving accessibility of campus navigation for visually impaired students.”
Cross?Disciplinary Fusion	Combine two fields you enjoy. Look for emerging intersections.	“Blockchain for secure sharing of medical imaging data.”
Consult Mentor/Advisor	Schedule a short meeting with a faculty member; bring 3?5 rough ideas.	Mentor points you to a funded grant project needing a student lead.

4. Narrowing Down: From Idea to Viable Topic

1. Write a One?Sentence Pitch

Format: “I will [action] to [outcome] for [who/what] using [method/technology].”

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Example: “I will develop a machine?learning model to predict short?term demand for shared