

Choosing a Capstone Project Topic

Choosing a Capstone Project Topic – Quick?Reference Notes

1. Why the Topic Matters

Benefit	How it Helps You
Motivation	Working on something you care about keeps energy high throughout the semester.
Relevance	A topic aligned with industry trends or academic gaps makes your work more visible to employers and scholars.
Feasibility	Selecting a realistic scope prevents burnout and ensures you can deliver a complete product or study.
Skill Development	The right topic lets you practice the technical, analytical, and communication skills you want to showcase.

2. Core Criteria for a Strong Topic

Criterion	Questions to Ask	Red?Flag Indicators
Interest & Passion	What problems excite me? Which subjects do I read about in my free time?	“I’m not sure” after several minutes of brainstorming.
Relevance	Does the topic address a current industry need, research gap, or societal issue?	The problem is already solved or has been over?studied without new angles.
Scope & Scale	Can I complete the work in 3–6 months with available resources?	Requires a multi?year data collection effort or expensive equipment you can’t access.
Data / Resources	Are datasets, tools, labs, mentors, or collaborators readily available?	Data is proprietary, inaccessible, or requires costly licensing.
Originality	What new insight, method, or product will I contribute?	Replicating an existing study without a novel twist.

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Criterion	Questions to Ask	Red-Flag Indicators
Career Alignment	Will the project showcase skills that employers in my target field value?	The topic is unrelated to any job or graduate-school path I'm considering.
Ethical & Legal Viability	Does the project respect privacy, consent, and IP rules?	Involves human subjects without a clear IRB pathway.

3. Step-by-Step Topic Selection Process

1. Brainstorm Broad Themes

- Write 5–7 high-level areas (e.g., *sustainable energy, health informatics, fintech, UX design, social robotics*).
- Spend 5-min per theme noting any recent news, papers, or personal anecdotes that spark curiosity.

2. Do a Mini-Literature Scan

- Search Google Scholar, IEEE Xplore, or your discipline's database with 2–3 keywords per theme.
- Note: number of recent papers, recurring gaps, and whether data sets are mentioned.

3. Create a “Fit Matrix”

Theme	Interest (1-5)	Data Availability (1-5)	Feasibility (1-5)	Career Value (1-5)	Total
Example: AI-driven waste sorting	4	3	4	5	16
...	...	...	...	...	...

- Prioritize themes scoring **??14**.

4. Narrow to 2–3 Concrete Ideas

- Turn each high-scoring theme into a specific research or development question.

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- Example: *“Can a lightweight CNN classify recyclable plastics on a conveyor belt with >90% accuracy using a low-cost camera?”*

5. Validate with Stakeholders

- **Advisor / faculty:** Ask if the scope fits program requirements.
- **Industry contact (if applicable):** Confirm data access, potential impact, and mentorship.
- ****Peers**