

Meeting Minutes

Group 8 - C.A.V.E: Cave Assessment and Visualization Equipment

Sept. 11, 2025

Attendees: Abdul, Tabish, Berk, Andrew (online)

Notetaker: Nicholas

Agenda:

Team Technology

- Messaging/Communication: Teams
- Files- onedrive/sharepoint, eventually all Github (especially source files)
- CI/CD- optional since we're tron, should do some CI as is convenient and helps us, should be fire and forget
- Berk makes the repo
- Refining scope given by Andrew into an email to Dr. Wassying for approval for Berk's entry into the group. Will then slightly rotate it into the group formation message required for the deliverable.
- Regular meeting during tutorial time (first hour), in person
- Andrew as Liasion, chair
- Nicholas as scribe
- Python for now, cython exists if speedup needed
- Can split computation into recording data/hardware interface, processing is separate task on another computer. Want to start over on that code, could pick fresh start. Various C/C++ libraries for these tasks
- Possible stretch goal to have a backend, database to back up info/sync btn pi and server
- Probably have a linter, Berk will see to it. Can follow formal convention, put issue number in commit message: <https://www.conventionalcommits.org/en/v1.0.0/>

Future Work

- Explore existing literature (aka the code from the last group, or Andrew's from last year)
- Figure out how the power delivery board works, determine whether we can reuse
- Sent out GitHub IDs to Andrew to share the code with us

Deliverables

- Next deliverable is September 21st, 10 days from now; form teams, project description.
- Berk has emailed the professors about his case, will move towards the team formation deliverable based on that.

Sept. 18, 2025

Attendees: Abdul, Tabish, Berk, Andrew (all online)

Notetaker: Nicholas

Project Goals and Development Plan

Plan:

- Work asynchronously throughout the week on goals, add requirements and constraints as they relate to goals.
- Work on this whenever have time over the next week
- Set main goal small, add stretch goals for other feasible
- Dev Plan rough outline
- Review existing materials from research project and last year's capstone, going over source code, power pcb, see what is useful for us
- Make contact with old capstone group to understand that power pcb end of Sept
- After, test sensors to see how well they work, and roll into proof of concept deliverable Oct
- For PoC itself, mainly need to demonstrate software can work with data from the sensors, fusing the two. Electrical and mechanical are minor considerations, test sensor→sfwr model
- critical point of POC is ensuring sensors work for our goal
- Mech, elec, sfwr designed/implemented in parallel, feedback between them, iterations
- Main shortcomings to improve this year for rev0: ToF camera/sensor was not really working last year
- Reusing Pi5, could improve electrical system for rev0. Could also want something more efficient for sensor collection, data processed elsewhere. Do PoC and then re-evaluate

Development:

- Andrew plugged in the TOF camera and Windows sees it as a serial device
- Sensor documentation:
<https://wiki.sipeed.com/hardware/en/maixsense/maixsense-a011/maixsense-a010.html>

Deliverables:

Project Goals and Development Plan - Sept 28 (11 days)

Sept. 25, 2025

Attendees: Abdul, Tabish, Berk, Andrew

Notetaker: Nicholas

Project Goals and Development meeting (*deliverable on the 28th*)

- Break down document into chunks, one person is responsible for completing it, two more for reviewing it
- Finish writing sections by Saturday, finish reviewing by Sunday
- Add rough goals to doc together during meeting
- Also hash out the steps involved in project development
- Prioritize setting up Git repo, evaluate using Dr. Smith's template
- Split the work out, everyone has ~2 writing items to complete by Saturday, 3-4 reviewing tasks

Oct. 2, 2025

Attendees: Abdul, Tabish, Berk, *Andrew (Away)*

Notetaker: Nicholas

Agenda:

GitHub

- Used Dr. Smith's template, has a lot extras/fluff that we won't probably use like in docs
- Main thing to keep is the action compiling the latex files, will be useful for future documentation
- All future docs in the Github as tex
- Convert meetings notes and commit
- Same for goals/development plan
- Use issues to track who does what -link commits to issues, assign to people
- CI/CD: some tools to autogenerate issues if there are problems with the code
- Use issues for actual tasks to complete in repo, ie meeting minutes, code additions, documentation
- Add issues for ci/cd, notes, etc.
- May be an issue with permissions, no one can assign issues or create commits

Action Items

- Github permissions from Andrew
- Add sufficient issues to get us to the PoC (Oct 27)
- Complete the setup tasks before the next TA meeting
- Meet with Giamou before PoC, possibly during this meeting time

DATE

Attendees: Abdul, Tabish, Berk, Andrew

Notetaker: Nicholas