Intellectual Merit Criterion

Overall Assessment of Intellectual Merit

Excellent

Explanation to Applicant

The candidate has a solid record of conducting research projects since undergraduate period. The candidate has published a few high-quality papers on good conferences. The research plan is well motivated. The candidate might need to reduce the scope of the research plan and provide details on some key approaches. Three letters are all very strong, providing the evidence of the candidate's research capability.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Very Good

Explanation to Applicant

The candidate had organized a few successful hackathons and a mentorship organization for helping high schoolers. The candidate may need to build some teaching experience by becoming a TA for undergraduate courses in the future.

Summary Comments

The candidate has a solid record of conducting high-quality research and has published a few good-quality papers. The research plan is well motivated. It can be narrowed down and enhanced with more details for some key approaches. The candidate has organized hackathons and a mentorship organization for helping high schoolers. The candidate can build teaching experience as a TA for undergraduate courses.

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit

Excellent

Explanation to Applicant

The applicant plans to generate high resolution grid mapping information with commodity cameras in three stages. He explores the use of computer vision to sense and monitor electricity via night lights. He has three published papers so far based on his prior researches which is good for a second-year graduate student. His first paper was a best paper nominee. He has enough research experience and background (completed two graduate courses related to computer vision) to be successful in the proposed research. His current research work is also submitted to ACM COMPASS for review. He has been awarded a departmental "Award of Excellence" which is given to only 3% of top students. One of the recommenders emphasizes the applicant's performance through converting the course project into a publication. The applicant has a high GPA.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Excellent

Explanation to Applicant

Grid mapping and voltage monitoring will help access to reliable power. This can be in particular important for developing countries. The output of the applicant's work can be both paper publication and also working systems in practice. The applicant

has led or co-led several projects. He initialized a college-level mentorship organization to prepare high school students for science competitions.

Summary Comments

The applicant is a highly qualified candidate for this fellowship. He has an interesting research plan and has the necessary motivation, background, and skill set to be successful in the proposed research.

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit

Excellent

Explanation to Applicant

The candidate plans to conduct research on the theme entitled "Monitoring the Electric Grid with Computer Vision". The applicant has prepared a detailed and clearly written proposal that highlights the key points of the research. The main outcome of this research will consist in the deployment of vision-based devices that can extract the phase and voltage of all night lights within a city. The candidate has shown excellent aptitude in scholarship.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Very Good

Explanation to Applicant

The candidate has passion for STEM mentoring, the applicant is encouraged to get involved into teaching as well. The applicant has produced specific examples of outreach to be employed in the future to have a broader impact. The result of the future research will have implications in solving many important problems in vision-based sensing applied to electric grid monitoring.

Summary Comments

The applicant aims to research on the theme entitled "Monitoring the Electric Grid with Computer Vision". The applicant proposal is well developed although it would have been appropriate to add more details that reinforce its Intellectual merit. The application contains strong letters of recommendation that give the assurance that the research project would be successfully completed.