Deep Learning Based High Accuracy Real World Localization in Indoor mmWave Networks With Virtual Anchors

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1. **Documentation: Is the artifact/code sufficiently documented?**

   Rate from 0% to 100%, where 0% means "documentation is completely insufficient" and 100% means "documentation is absolutely sufficient". If you need to assess both a dataset and tools, please take the average and comment below. In assessing tools, please consider if they are easy or difficult to install/set up and get to run. In assessing datasets, please consider if the meta data is sufficient.

   Choices are:
   - ☐ **1.** 0%
   - ☐ **2.** 20%
   - ☐ **3.** 40%
   - ☐ **4.** 60%
   - ☑ ~~**5.** 80%~~
   - ☐ **6.** 100%

   Documentation: Comment on/explain your choice above:

The setup process to run the code was simple and went smoothly. The receiver code is organized in an organized structure making it easy to interpret. The datasets could use some more documentation on what the data is and how it's integrated into the algorithm.

2. **Completeness: Do the submitted artifacts/code include all of the key components described in the report?**

   Rate from 0% to 100%, where 0% means "does not include any key components" and 100% means "includes all key components".

   Choices are:
   - ☐ **1.** 0%
   - ☐ **2.** 20%
   - ☐ **3.** 40%
   - ☐ **4.** 60%

- ☐ **5.** 80%
- ☑ ~~**6.** 100%~~

Completeness: Comment on/explain your choice above

The submitted code contains all the collected data described in the report, and the end result displaying the localization error is easily reproducible. Looking into the modules of their receiver file shows that it includes all the key components described in their report.

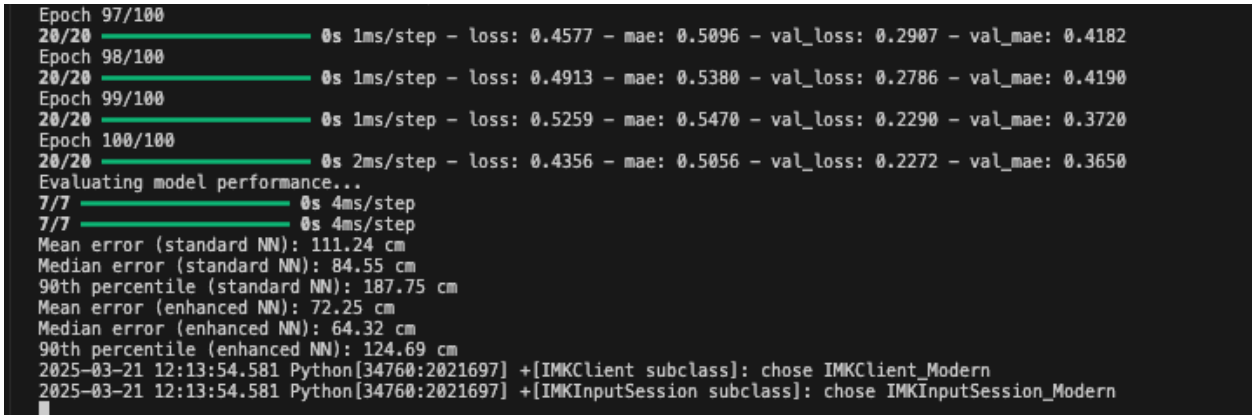
3. Exercisability: Do the submitted artifacts/code include the scripts and data needed to run the experiments described in the paper, and can the software be successfully executed?

Rate from 0% to 100%, where 0% means "the scripts/software cannot be successfully executed and/or no data is included" and 100% means "the artifact includes all necessary scripts/software and data, and scripts/software (if present) can be successfully executed".

Choices are:

- ☐ **1.** 0%
- ☐ **2.** 20%
- ☐ **3.** 40%
- ☐ **4.** 60%
- ☐ **5.** 80%
- ☑ ~~**6.** 100%~~

Exercisability: Comment on/explain your choice above



All the data and software was in the code and was easy to run. I was able to clone the repository and create a Python venv as well as download all the requirements and the scripts did run successfully as shown above.

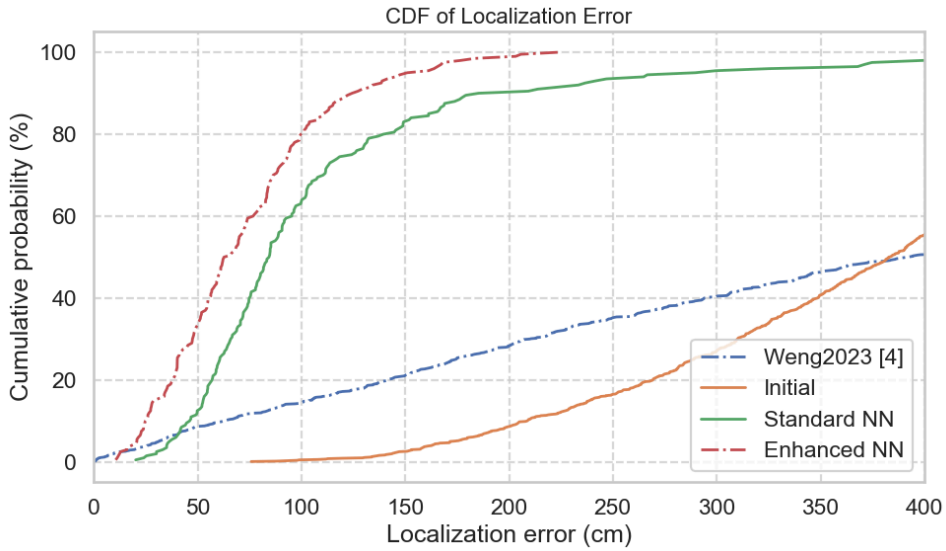
4. **Results attainable: Does the artifact/code make it possible, with reasonable effort, to obtain the key results from the artifact/code?**

   Rate from 0% to 100%, where 0% means "no results can be obtained" and 100% means "all results can be obtained".

   Choices are:

   - ☐ **1.** 0%
   - ☐ **2.** 20%
   - ☐ **3.** 40%
   - ☐ **4.** 60%
   - ☐ **5.** 80%
   - ☑ ~~**6.** 100%~~

   Results attainable: Comment on/explain your choice above



By running the python script I was able to obtain the graph above for the CDF of localization error. As the remainder of the artifacts required hardware we were not able to obtain, we were unable to generate those plots.

5. **Results completeness: How many key results of the paper/report is the provided code meant to support?**

   Rate from 0% to 100%, where 0% means "the artifact is meant to support no key results" and 100% means "the artifact is meant to support all key results".

   Choices are:

   - ☐ **1.** 0%

- ☐ **2.** 20%
- ☐ **3.** 40%
- ☐ **4.** 60%
- ☑ ~~**5.** 80%~~
- ☐ **6.** 100%

Results completeness: Comment on/explain your choice above

The provided code serves to generate the CDF of the localization error, which addresses the key idea of their paper on whether or not their virtual anchors enhance localization performance as compared to other methods. The only thing missing was the code that they used to collect their real-time data.

Reviewer Team member1: William Zhao, *William Zhao*

Reviewer Team member2: Tien Vu, *Tien Vu*

Reviewer Team member3: Harrison Kung, *Harrison Kung*