Jasmine Mishra <jasmine.victoria.mishra@gmail.com> 12:59 PM (0 minutes ago)

to hayashid

Dear Dr. Misa Hayashida,

My name is Jasmine Mishra and I am writing on behalf of my software engineering team from UBC Okanagan. The team members are Lucas Towers, Garrett Cook, Jose Pena Revelo, and myself. I will be the point of contact between my team and you. We are very excited to begin working with you on this project.

We understand that you are going away on Wednesday, so we would like to have a meeting via Zoom tomorrow to discuss the project details if possible. My team is available to meet anytime after 12pm tomorrow.

After you return from your time away, we would also like to set up a weekly meeting time to update you on our progress as the project progresses this summer. What times are you available to meet tomorrow? And which times are you available to meet on a weekly basis?

Thank you,
Jasmine Mishra

Computer Science Undergraduate
UBC Okanagan
email: jasmine.victoria.mishra@gmail.com

Misa Hayashida 1:52 PM (4 hours ago)

to me

Hi Jasmine

Thank you for your email.
I'm available at 12 pm (1 pm Edmonton time) tomorrow.
See you then.

Thank you,

Misa

•••

Jasmine Mishra <jasmine.victoria.mis… 12:33 PM (0 minutes ago)

to Misa

Dr. Hayashida,

I hope you have been well. I am writing to set up a weekly meeting time for the software engineering project. What times during the week are you available to meet on a weekly basis?

In the past few weeks, our software engineering team has been working on specifications, planning, and design for the creation of the three softwares in Python. Also, we have a few questions about the MATLAB programs that we would like to ask you during a meeting.

Thank you,
Jasmine Mishra

Computer Science Undergraduate
UBC Okanagan
email: jasmine.victoria.mishra@gmail.com

Misa Hayashida 1:09 PM (0 minutes ago)

to me

Hi, Jasmine

I prefer to have a weekly meeting Friday afternoon.
Does that work for you?

Thank you.

Misa

Jasmine Mishra 3:51 PM (0 minutes ago)

to Misa

Hi Dr. Hayashida,

Friday afternoon works, how is 3:30 MDT (2:30 PDT)?

Thank you,
Jasmine Mishra

Misa Hayashida 3:55 PM (3 minutes ago)

to me

Sounds good. See you then

Jasmine Mishra <jasmine.victoria.mishra@gmail.com>

to Misa

Hello Dr. Hayashida,

Attached below is a Zoom meeting link for our meeting this afternoon at 3:30 MDT (2:30 PDT).

Join Zoom Meeting:
https://us04web.zoom.us/j/78162311720?pwd=XgBk9RBt277lRyqwO1EtYM5UUo0O3p.1

Meeting ID: 781 6231 1720
Passcode: Ft1pg6

Thank you,
Jasmine Mishra

M

Misa Hayashida Jun 10

to me

Hi Jasmine

I added the "Display prz(python)" folder in the link below (qEELS folder).

https://drive.google.com/drive/folders/1ELr4hQ2VUloDVzjnfNTttnk2aT9L4haa?usp=sharing

There is an example python code to open the "prz" file.

Thank you.

•••

M

Misa Hayashida 6:17 PM

to me

Hi Jasmine

I prefer to have a weekly meeting at 12 pm Vancouver time on Tuesday as I told you at the last meeting.
We just had a meeting last Friday, so can I skip a meeting this Tuesday?
But please email me if you have questions during this week.

Thank you.

•••

Misa Hayashida 3:21 PM (0 mir

to me

Hi Jasmine

I added a note for Alignment software in the link below.
https://drive.google.com/drive/folders/1xzfFePxj2w0gi5fuSK6pDJ8gIUvT2KNd?usp=sharing

It is about Python DM3 Reader.

Thank you.

Misa

•••

Jasmine Mishra 3:47 PM (1 minute ago)

to Misa

Hello Dr. Hayashida,

Thank you for the resource, we have also created our own implementation for DM3 reading and writing. We were also wondering: would it be useful to have an option to export TIFFS?

Thank you,
Jasmine

•••

Jasmine Mishra <jasmine.victoria.mishra@gmail.com>
to Misa

Send scheduled for Tomorrow, 8:00 AM

Dr. Hayashida,

Below is a Zoom invitation to our meeting today at 12pm PDT (1pm MDT):

Lucas Towers is inviting you to a scheduled Zoom meeting.

Join Zoom Meeting
https://us05web.zoom.us/j/88579814809?pwd=WFN2TjJRWUdLNE93K2tXd0VsbjJqQT09

Meeting ID: 885 7981 4809
Passcode: bEn685

Thank you,
Jasmine Mishra

Misa Hayashida Tue, Jun 21, 1:15 PM
to me

Hi Jasmine

I uploaded "1_qEELS_1deg_sum_revised.prz" in qEELS folder.
The data type is flot, so the image can be displayed properly in python.

Thank you.

Misa

•••

Jasmine Mishra <jasmine.victoria.mishra... Tue, Jun 21, 7:05 PM
to Misa

Hello Dr. Hayashida,

Thank you for the resource!

From,
Jasmine Mishra

Misa Hayashida Tue, Jul 5, 4:18 PM (7 days ago)

to me

Hi Jasmine

Just a small change.

Line 528 in qEELS_peak_detection_fitting_newest2.m
I changed 0.0019 to 0.0019687 in the equation.

I rewrote qEELS_peak_detection_fitting_newest2.m in the google drive.

Thank you.

Misa

Jasmine Mishra <jasmine.victor… Tue, Jul 5, 8:32 PM (7 days ago)

to Misa

Hello Dr. Hayashida,

Thank you for letting us know!

Much appreciated,
Jasmine Mishra

Misa Hayashida Mon, Jul 11, 11:21 AM (1 day ago)

to me

Hi Jasmine

I changed "qEELS_peak_detection_fitting_newest2.m" again as follows.

Line 70 Planck_constant=4.1356*10^(-15);

Line 528 dispersionQ = 0.0019687*abs(q_p)*10^(-9)*10^(6);

I rewrote qEELS_peak_detection_fitting_newest2.m in the google drive.

Thank you.

Misa

Misa Hayashida Mon, Jul 11, 1:18 PM (1 day ago)

to me

Hi Jasmine

My supervisor said you can use Github for this project.

Thank you.

Misa

Misa Hayashida <hayashid@ualberta.ca> Tue, Jul 12, 1:48 PM
to me

Hi Jasmine

For Nanomi
The range of C1, C2 and C3 : 6-300 (the same as the range in Matlab file)
The units for C1, C2, C3, Objective, Intermediate and Projective (except for Distance) of the scrollbars should be "mm".

For Alignment software
I want to keep all the csv files.
If binning.csv, move1.csv, move2.csv and magnification.csv can be combined into one file, it will be great.
marker_data.csv and tilt_angle.csv should be as it is.

Thank you.

Misa

•••

Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Tue, Jul 12, 3:36 PM
to Misa

Hello Dr. Hayashida,

Thank you for all the helpful information.

Much appreciated,
Jasmine

•••

Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Wed, Jul 13, 10:12 AM ☆
to Misa

Dr. Hayashida,

I have one question about Nanomi Optics software. In the MATLAB software, the diagram draws only 2 elec
beams, but uses 4 beams for the calculations. While in the Python software you gave us, the diagram draws
beams. Would you like us to draw all 4 electron beams?

Thank you,

Jasmine

Misa Hayashida <hayashid@ualberta.ca> Wed, Jul 13, 12:04 PM ☆
to me

Hi Jasmine

Sorry for the confusion.
Could you please draw all 4 beams?
Thank you.

Misa

•••

Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Wed, Jul 13, 12:06 PM ☆
to Misa

Hello Dr. Hayashida,

No problem, thank you so much for the clarification!

Much appreciated,

Jasmine

Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Tue, Jul 19, 5:07 PM

to Misa

Hello Dr. Hayashida,

We have one question about NanoMi Optics. For the ray propagation in vacuum for all C lenses to each of their images, the MATLAB code draws a thicker redline for all lenses. Do you think it would be okay if we just make the ray colour thicker to indicate this instead of changing all of the ray propagation colours to red?

Thank you,
Jasmine Mishra

Misa Hayashida Wed, Jul 20, 9:30 AM

to me

Hi Jasmine

That's fine. Even better.
Thank you so much.

Misa

Misa Hayashida Tue, Jul 26, 4:51 AM

to me

Hi Jasmine

I'm sorry. I can not join today's meeting.
Could you please email me questions if you have instead?
Sorry for the last minute notice.

Misa

Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Mon, Aug 8, 9:20 AM (9 days ago)

to Misa

Hello Dr. Hayashida,

In tomorrow's meeting, we are going to help you install and run through the software. In order to do so, y
Python version 3.9 or Python 3.10 installed on your computer. If you could please check which Python ve
have installed?

If you do not have 3.9 or 3.10, you can install here:
https://www.python.org/downloads/windows/

Thank you,
Jasmine

Misa Hayashida Mon, Aug 8, 9:56 AM (9 days ago)

to me

Hi Jasmine

I installed python 3.9 on my computer.
Thank you.
See you tomorrow.

Misa

•••

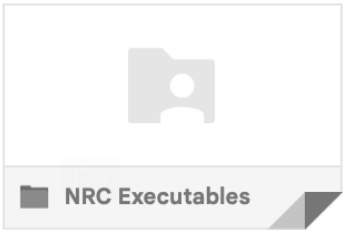
Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Tue, Aug 9, 12:10 PM (8 days ago)

to Misa

Hello Dr. Hayashida,

This link holds the executables:
https://drive.google.com/drive/folders/1HfktBJVo33uvFFhr5QAi5Fy-pj2er8En?usp=sharing

Thank you,
Jasmine



Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Tue, Aug 9, 2:15 PM (8 days ago)

to Misa

Hello Dr. Hayashida,

How to install and run the software on your home computer:

1. Install a stable version of Python 3 (must be >=3.9)
https://www.python.org/downloads/windows/
2. Extract the full source code to a folder on your device. On the repository, click the green button that says "Cc
click "Download Zip." Then go to the zip file on your computer and click "extract file."
https://github.com/UBCO-COSC-499-Summer-2022/matlab-to-python-application-translation-project2-nrc.git
3. Run 'install.py' in the 'scripts' folder with Python.
4. Run the other scripts in the 'scripts' folder with Python to run the softwares.

We will show you how to run the software in VS code for editing during Friday's meeting.

Please let me know if this works for you!

One question about qEELS:
What is the PRZ image that is uploaded to qEELS called? Is it called a q-EELS pattern image or a spectrogram

Thank you,
Jasmine

Misa Hayashida Tue, Aug 9, 2:38 PM (8 days ago)

to me

Hi Jasmine

Thank you for the instruction.

Please call the PRZ image "two-dimensional spectrum".

Misa

Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Tue, Aug 9, 6:09 PM (8 days ago)

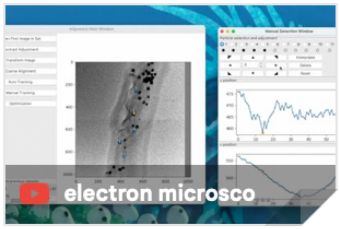
to Misa

Hello Dr. Hayashida,

Thank you! Also, here is a video overview about Tomography Alignment Software in case you might need some assistance navigating:

https://youtu.be/eJnH7GQfo_c

Much appreciated,
Jasmine Mishra



Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Tue, Aug 9, 11:49 PM (8 days ago)
to Misa

Hello Dr. Hayashida,

I apologize for the inconvenience. There was a minor bug in the install software that we fixed tonight and added to the code Zip file

If you tried to download the code Zip file from the repository today, you will need to redownload the code because it has been updated with the fix.

If you have not downloaded the code Zip file from the repository yet, do not worry about the bug and you will not have any issues with install.

The steps to follow to run the code are the same as in my previous email.

So sorry and thank you,
Jasmine Mishra

Misa Hayashida Wed, Aug 10, 7:02 AM (7 days ago)
to me

Hi Jasmine

I installed the software from the GitHub link on my home computer.
It worked perfectly fine.
I also checked each software package. Everything looks good.
Thank you for your hard work. They look much better than my Matlab code.

Also thank you for the video overview about Tomography Alignment Software.
Can I show it to my colleges and students in the future?

I will ask an IT person at NRC to add python to Windows PATH, then try to install the software from GitHub on my NRC computer today.

Thank you.

Misa

Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Wed, Aug 10, 1:22 PM (7 days ago)

to Misa

Hello Dr. Hayashida,

That is great to hear! And yes, you can show the video to your colleges and students. We also have videos for the other two software and are making some instructional documentation. We will share these with you when we are completely finished with them.

Thank you so much and see you on Friday!

Jasmine Mishra

Misa Hayashida Wed, Aug 10, 2:09 PM (7 days ago)

to me

Hi Jasmine

That's great. Thank you for the videos and documentation.

I could add python to Windows PATH and could install the software from Github on my lab computer.
Then, everything works well on the computer as well.

See you on Friday.

Misa

Misa Hayashida Wed, Aug 10, 2:16 PM (7 days ago)

to me

Hi Jasmine

Now when I click "install.py", all three software packages are installed.
If I want to share only one of the three software packages with somebody, how should I share it?

Is there a way to install individually?

Thank you.

Misa

Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Wed, Aug 10, 3:04 PM (7 days ago)

to Misa

Hello Dr. Hayashida,

Right now we have the software share code that is similar to each other in a common folder that is named "common" in nrcemt.

There are two different options that we could do to have individual software:
1. You can just delete the other two folders and scripts in nrcemt, and leave just **common** folder and the **specific application** folder
2. We could also refactor so that the functionality from the common folder is copied into each project and split them into individual unlinked projects.

Would you prefer if the three software were completely individual? We can fix this very quickly for you.

Thank you,
Jasmine

Misa Hayashida Wed, Aug 10, 3:12 PM (7 days ago)

to me

Hi Jasmine

Yes. I prefer that the three software were completely individual.
Thank you.

Misa

•••

Jasmine Mishra <jasmine.victoria.mishra@gmail.com> Thu, Aug 11, 10:16 AM (6 days ago)

to Misa

Hi Dr. Hayashida,

We updated the GitHub repository so now the three software are completely individual. Downloading and running the software are now slightly different:

1. Extract the full source code to your machine. (same as before, use the green button on the GitHub repository named 'code')

In the source code, you will now see that each software has its own folder. Each software has its own `install.py` and `main.py`.

2. In the project folder for the software that you want to install, run its `install.py` file with python. This installs the software.

3. In the project folder for the software that you want to run, run its `main.py` file with python. This runs the software.

If you want to share a specific software, you will just need the folder for that software.

Let us know if that works for you!

Jasmine Mishra

Misa Hayashida Thu, Aug 11, 3:10 PM (6 days ago)

to me

Hi Jasmine

Everything works perfectly fine.
Thank you so much.

Misa

•••

Finishing the project

Misa Hayashida

Finishing the project

Hello Dr. Hayashida,

I am glad to say that the software and the project are both now officially finished! Changes that have been made to the software since I was last in contact with you are: manual contrast adjustment in Alignment Software and result saving in NanoM Optics are both added.

You can redownload the finished software from our GitHub repository to see the changes we made.

In our GitHub we also have some documentation about the project, including an overview "final documentation" document, user manuals for all three software, and technical documentation. I have also made Google Docs for all of these so you can copy them and edit them accordingly. You can find them attached to this email.

Dr. Fazackerley, our course instructor, has sent out some client feedback for you to fill out as well.

On behalf of my group, I really want to thank you for this amazing opportunity.

Thank you so much,
Jasmine Mishra