From: **CHETAN MAROTI CHINCHULKAR** c.chetan@iitg.ac.in
Subject: Discussion regarding Mini Project
Date: 9 December 2022 at 4:45 PM
To: Bosanta Ranjan Boruah brboruah@iitg.ac.in

Acad Transcript.pdf

Chetan Maroti Chinchulkar

Roll No.:200121012
B.Tech - Engineering Physics
Indian Institute Of Technology, Guwahati

+91-9168250651
chetanchinchulkar.1802@gmail.com
c.chetan@iitg.ac.in
Github | Linkedin

Education

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. Major	Indian Institute of Technology, Guwahati	7.63 (Current)	2020-Present
Senior Secondary	CBSE	94.4%	2020
Secondary	CBSE	96.4%	2018

Experience

- **Insight Brandcom Pvt. Ltd.** *July 2022 - Present*
  SDE Intern Guwahati
  – Used **Chart.js** to facilitate performance analysis on the **Article Tracker Dashboard** and ameliorate performance
  – Used **Bootstrap** and **PHP** to create portal for **Creator Summit 2022** by GPlus Guwahati(Insight Brandcom Pvt. Ltd.) which includes registration, nomination and displaying results on the landing page with attractive graphics
- **ALLAY | Magitech Innovision LLP** *Aug 2021 - Oct 2021*
  Web Development Intern Guwahati
  – Developed a **Content Management System** using **Bootstrap** and **Django** for Placement Drive and Exam portal
  – Developed different sections for Administrator, Company, and Applicants with a standard login system, where privileges are provided based on roles making it easier to navigate and manage the website
  – Implemented filter options according to categories, and the overall signups rose by around **40%**
- **Khoka Rentals & Logistics** *Jan 2022 - Feb 2022*
  Web Development Intern Guwahati
  – Used **Bootstrap**, **Javascript** and **node.js** to develop **Web app** for managing the last-mile deliveries, to streamline the logistics process and help campus residents to get the things they need at their comfort at their room
  – Integrated different sections for Administrator, Bearer, and Customer with a standard login system using mongoDB

Projects

- **SAIL Portal 2.0** *Sep 2021 - Dec 2021*
  SAIL, IIT Guwahati bit.ly/3c6XLcN
  – Used **Bootstrap** and **Django** to develop the **Web portal** enabling alumni to smoothen the process to obtain transcripts & the alumni card and to showcase various initiatives taken by SAIL to help students connect with alumni
  – Implemented **Opportunities Section** allowing alumni to send updates about various opportunities available for them making it easier for students to get information about the new opportunities, training, and internships
- **Spardha Portal, IIT Guwahati** *Mar 2022 - Apr 2022*
  SWC, IIT Guwahati Live Website | bit.ly/3c9DiUI
  – Developed a **Web Portal** using **Django(DRF)** and **React.js**, integrating sports analytics into a single platform.
  – Spardha Portal allowed **5000+** students to monitor the activities during Spardha, the inter-hostel sports competition
  – Developed various **APIs** to handle diverse views and the relationships between models
- **UDGAM 2022** *Oct 2021 - Nov 2021*
  E-Cell Club ,IIT Guwahati Live Website | bit.ly/3PpbdaB
  – Developed web site for managing and supervising the online event UDGAM using **Javascript, Bootstrap,** and **node.js**
  – Implemented **responsive** and **mobile-friendly** website to enhance and unify the user experience; used by **10k users**

Achievements

- **Winner of GOC3**: Participated and won Game Of Codes 3, conducted by **Hack2Skill** *Jun 2022*
- **CTFs on VulnHub**: Solved and documented various CTFs on the Vulnhub and tryhackme bit.ly/3NYiEnV

Technical Skills

- **Programming and Database**: Python, C, C++, MySQL, Typescript*, OSS*
- **Web Technologies**: Django, Chart.js, HTML, CSS, Bootstrap, PHP*, JavaScript*
- **Operating Systems**: Windows, Linux*
- **Miscellaneous**: LaTeX, Git, MATLAB, Burp Suit*

** Elementary proficiency*

Key courses taken

- **Computer Science**: Introduction to Computing (Theory+Lab), Machine Learning, Data Structures & Algorithms in C++, Web Development (Frontend & Backend), Cybersecurity & Ethical Hacking
- **Mathematics**: Mathematics-I, Mathematics-II, Mathematical Physics

Positions of Responsibility

- **Web Developer**, Students Web Committee(SWC), IIT Guwahati *Apr 2022 - Sep 2022*
- **Web Developer**, Student Alumni Interaction Linkage (SAIL), IIT Guwahati *Nov 2021 - Jun 2022*
- **Web Team Coordinator**, Research & Industrial Conclave, IIT Guwahati *Nov 2021 - Mar 2022*
- **Senior Executive**, E-Cell, IIT Guwahati *Dec 2021 - Mar 2022*
- **Manager**, UDGAM 2022, IIT Guwahati *Dec 2021 - Jan 2022*

Extracurricular Activity

- **Mentor, SWC Workshop**: Conducted a week long **Django and Cybersecurity** workshops each with **80+ participants**

- **Run for Prithvi**: Was one of the **top 15** finishers in the marathon by **Alcheringa**, which had over **300 participants**
- **Research and Industrial Conclave 2022**: Managed several events in addition to Web Teamwork; was in charge of ensuring the success of events along with the event's live streaming on YouTube

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Subject: Re: Discussion regarding Mini Project
Date: 9 December 2022 at 4:48 PM
To: CHETAN MAROTI CHINCHULKAR c.chetan@iitg.ac.in

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Bosanta R. Boruah
Professor, Department of Physics
Indian Institute of Technology Guwahati
Guwahati-781039, India
Phone: +91 (0)361 2582725 (o)
FAX: +91 (0)361 2582749
Alternate email id: boruahbr@hotmail.com
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Since I am not present in campus, I'd be grateful if we can meet tomorrow as per your convenience to discuss this further

Being an enthusiast for coding, algorithms and applications of Machine Learning along with Simulations in Physics, combined with the past experience of working on various projects, I'm confident to be part of this project and learn new perspectives about the same.

I've attached my grade card and resume with this email

attached my grade card and resume with this email.

Looking forward for your response.

Details:
Name: Chetan Maroti Chinchulkar
Roll No: 200121012

Thanks and Regards,
Chetan Chinchulkar
3rd year B. Tech. Engineering Physics
Indian Institute of Technology Guwahati

From: **CHETAN MAROTI CHINCHULKAR** c.chetan@iitg.ac.in
Subject: Re: Discussion regarding Mini Project
Date: 10 December 2022 at 6:42 PM
To: Bosanta Ranjan Boruah brboruah@iitg.ac.in

Thank you sir for offering me the project.
Looking forward for working.

Thanks and Regards,
Chetan Chinchulkar
3rd year
B. Tech. Engineering Physics
Indian Institute of Technology Guwahati

From: Bosanta Ranjan Boruah <brboruah@iitg.ac.in>
Sent: Saturday, December 10, 2022 6:20:33 PM
To: CHETAN MAROTI CHINCHULKAR <c.chetan@iitg.ac.in>
Subject: Re: Discussion regarding Mini Project

OK I am offering you the project.

****
Bosanta R. Boruah
Professor, Department of Physics
Indian Institute of Technology Guwahati
Guwahati-781039, India
Phone: +91 (0)361 2582725 (o)
FAX: +91 (0)361 2582749
Alternate email id: boruahbr@hotmail.com
****

From: CHETAN MAROTI CHINCHULKAR <c.chetan@iitg.ac.in>
Sent: 10 December 2022 16:44
To: Bosanta Ranjan Boruah <brboruah@iitg.ac.in>
Subject: Re: Discussion regarding Mini Project

Sir,
As
per our discussion over the call on Teams, tentatively, this would be the plan for approaching the Mini Project "**Development**
of Python code for exact ray tracing"

During
the initial few days, I will focus on resource collection for the project and reading/revisiting the theoretical concepts involved.
I
will participate in timely meetings with the team on a weekly basis and show weekly/biweekly progress updates.
A
tentative plan for the Project is as follows:

- Creating a ray tracing algorithm using physical concepts learned
  - This can involve setting up the lens, screen, object, light source, mirrors, etc

source, mirrors, etc.

- Working on the intersection of light rays
  - This will be helpful for point source
- Similarly, we can extend it for extended objects like spheres
- In addition to this, we can also use the Blinn-Phong reflection model for ray tracing (Still searching for appropriate resources for study material)

Apart from this implementation from scratch, we can use libraries in python like Optix.

To conclude, I'll be committed to this project "**Development of Python code for exact ray tracing**". During the time when I won't be present on campus, I will contribute towards the part of the project which doesn't include lab participation. I will set aside the required hours for this project, even when I'm involved in any Event Management/Work in any student body/Club.

Kindly let me know if any further details are required in this project plan. I look forward to your response and suggestions.

Thanks and Regards,
Chetan Chinchulkar
3rd year
B. Tech. Engineering Physics
Indian Institute of Technology Guwahati

> On 09-Dec-2022, at 4:51 PM, CHETAN MAROTI CHINCHULKAR <c.chetan@iitg.ac.in> wrote:
>
> Thank you for your quick response sir.
>
> Thanks and Regards,
> Chetan Chinchulkar
> 3rd year
> B. Tech. Engineering Physics
> Indian Institute of Technology Guwahati
>
> > On 09-Dec-2022, at 4:49 PM, CHETAN MAROTI CHINCHULKAR <c.chetan@iitg.ac.in> wrote:
> >
> > Sir, we can have an online meet over Teams.
> > I apologise for not mentioning in the mail.
> >
> > Thanks and Regards,
> > Chetan Chinchulkar
> > 3rd year
> > B. Tech. Engineering Physics

Indian Institute of Technology Guwahati

On 09-Dec-2022, at 4:48 PM, Bosanta Ranjan Boruah <brboruah@iitg.ac.in> wrote:

"Since I am not present in campus,
I'd be grateful if we can meet tomorrow as per your convenience to discuss this further"

How will you meet then?

****
Bosanta R. Boruah
Professor, Department of Physics
Indian Institute of Technology Guwahati
Guwahati-781039, India
Phone: +91 (0)361 2582725 (o)
FAX: +91 (0)361 2582749
Alternate email id: boruahbr@hotmail.com
****

From: CHETAN MAROTI CHINCHULKAR <c.chetan@iitg.ac.in>
Sent: 09 December 2022 16:44
To: Bosanta Ranjan Boruah <brboruah@iitg.ac.in>
Subject: Discussion regarding Mini Project

Sir,
I'm
Chetan Maroti Chinchulkar (Roll No. 200121012) and I'd like to work on "**Development of Python code for exact ray tracing**" with you as a part of B Tech. 6th-semester curriculum.

Working on projects like "**Option Pricing using Black Sholes Theory**" and "**Quantum Networks**" for PH301 and PH303, respectively, enabled me to engage with the application of physics in various domains.

I checked a few resources and am going through the site (https://medium.com/swlh/ray-tracing-from-scratch-in-python-41670e6a96f9) to get idea about the same . It would be great if I could discuss it with you and clear some doubts.

Python is used often today for many different things, including data analysis, simulations, and many other things. I enjoy utilizing computer code to apply physics because it allows us to model different systems virtually rather than physically.
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Looking
forward for your response.

Details:
Name:
Chetan Maroti Chinchulkar
Roll
No: 200121012

Thanks
and Regards,
Chetan
Chinchulkar
3rd
year
B.
Tech. Engineering Physics
Indian
Institute of Technology Guwahati