

ETHICS APPLICATION FORM



Please Note:

Any person planning to undertake research in the Faculty of Engineering and the Built Environment (EBE) at the University of Cape Town is required to complete this form **before** collecting or analysing data. The objective of submitting this application *prior* to embarking on research is to ensure that the highest ethical standards in research, conducted under the auspices of the EBE Faculty, are met. Please ensure that you have read, and understood the **EBE Ethics in Research Handbook** (available from the UCT EBE, Research Ethics website) prior to completing this application form: <http://www.ebe.uct.ac.za/ebe/research/ethics1>

APPLICANT'S DETAILS		
Name of principal researcher, student or external applicant		Elle Mouton
Department		Electrical Engineering
Preferred email address of applicant:		elle.mouton@gmail.com
If Student	Your Degree: e.g., MSc, PhD, etc.	BSc in Electrical and Computer Engineering
	Credit Value of Research: e.g., 60/120/180/360 etc.	40
	Name of Supervisor (if supervised):	Jarryd San and Amit Mishra
If this is a research contract, indicate the source of funding/sponsorship		N/A
Project Title		Micropayments in IoT using blockchain and payment channel technology

I hereby undertake to carry out my research in such a way that:

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

APPLICATION BY	Full name	Signature	Date
Principal Researcher/ Student/External applicant	Elle Mouton		23/07/2019
SUPPORTED BY	Full name	Signature	Date
Supervisor (where applicable)	AMIT MISHRA		24/7/19

APPROVED BY	Full name	Signature	Date
HOD (or delegated nominee) Final authority for all applicants who have answered NO to all questions in Section 1; and for all Undergraduate research (Including Honours).			
Chair: Faculty EIR Committee For applicants other than undergraduate students who have answered YES to any of the questions in Section 1.			

EEE4022S Project Proposal
24 July 2019

Elle Mouton (MTNELL004)

Student Name	Elle Mouton (MTNELL004)
Supervisor	Jarryd Son & Amit K Mishra
Title	Micro-payment in IoT using block-chain and payment channel technology
Description	<p>Use the Bitcoin Lightning Network to enable micro-transactions for pay-as-you go services or device-to-device transactions. This can include charging users as they scroll through an article rather than charging them for the whole article up front. This can also be used with IoT devices in the following way: a user can be billed incrementally through micro-payments for using a device or can even be paid through micro-payments for providing a service through an IoT device. It could also be extended to charging users of a resource on a pay-as-you-consume basis for something like electricity, water or sensor data.</p> <p>This project involves implementing such a system and comparing it to current available systems that use traditional payment methods.</p>
Deliverables	Implementation of a system that enables IoT devices to facilitate micropayments using Bitcoin and the Lightning Network. This will allow users to pay on a pay-as-you-consume basis.