

# Prof. Dr. Romi Fadillah Rahmat, B.Comp.Sc., M.Sc.

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🌐 [fasilkom-ti.usu.ac.id/en/lecturer/romi-fadillah-rahmat](https://fasilkom-ti.usu.ac.id/en/lecturer/romi-fadillah-rahmat)

*Mr. Romi Fadillah Rahmat, born on March 3, 1986, in Jakarta, he completed his Bachelor of Computer Science (Hons) in 2007 at Universiti Sains Malaysia, then he continued with his master degree in Science at the same university.*

*Starting his career as a permanent lecturer at Universitas Sumatera Utara from 2010, Mr. Romi held the position of Head of Information Technology Undergraduate Study Program from 2017-2021. His career at the university continued after being appointed as Secretary of Academic Senate USU for the period of 2019-2024. Then in 2021 he was appointed as Vice Dean III for Research, Community Service, Cooperation and Information. Previously he was also trusted as an ITE expert by most of the police in the North Sumatra Region. Mr. Romi has also been an expert and consultant for NGO Caritas for the Tsunami recovery program in Meulaboh, he was also involved as an expert consultant for application development at the Medan City Revenue Service from 2011-2014, and he served as Head IT Consultant for PT. Dhiarga in Medan. In 2019, Mr Romi was also involved in an orangutan monitoring project funded by USAID in Banda Aceh.*

*Mr. Romi Fadillah Rahmat started his research while studying for his master degree in Malaysia, with the focus of his research at that time on Brain-like Computing using the Distributed Adaptive Neuro-Gen Learning Engine, which is one of the novel methods he invented. Then Mr. Romi also received 17 research grants from 2014 until now, both from the Ministry of Education and Culture funds and from the Talenta USU research fund. His research interests are brain-like computing, image processing, image vision, deep learning, virtual reality, real-time processing, and data analytics. He has published more than 100 publications with 10 international journal articles. He won 2nd place as the Best Researcher in 2018 from USU. He completed his last education at the S3 level, Computer Science study program, at Universitas Sumatera Utara in 2024.*

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## Publications

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2017

Prosiding seminar internasional

### **Organization Readiness and ERP Implementation in Albaha University**

ROMI FADILLAH RAHMAT

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2026

Jurnal internasional bereputasi

### **Evaluation and comparison of classification models for predicting crash severity**

ROSSI PASSARELLA , MASTURA DIANA MARIESKA , DEDY KURNIAWAN , ROMI FADILLAH RAHMAT , ISBATUDINIA , Harumy Veny

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2023

Jurnal internasional bereputasi

### **Classifying Indonesian Cyber Crime Cases under ITE Law Using a Hybrid of Mutual Information and Support Vector Machine**

AINA HUBBY AZIIRA , ROMI FADILLAH RAHMAT , SARAH PURNAMAWATI , SHARFINA FAZA , AL- KHOWARIZMI

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2025

Jurnal internasional bereputasi

### **MODIFICATION OF MULTILAYER PERCEPTRON USING DETECTION RATE MODEL FOR PREDICTION OF NOMINAL EXCHANGE RATE**

ROMI FADILLAH RAHMAT

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2025

Jurnal internasional bereputasi

# ENHANCING WATER QUALITY CLASSIFICATION IN LAKE TOBA WITH DEEP LEARNING APPROACH

ROMI FADILLAH RAHMAT , SHARFINA FAZA , SARAH PURNAMAWATI

2025

Jurnal internasional bereputasi

## Computationally Efficient Single Layer Transformer Convolutional Encoder for Accurate Price Prediction of Agriculture Commodities

ROMI FADILLAH RAHMAT

2019

Jurnal internasional bereputasi

## Android-based automatic detection and measurement system of highway billboard for tax calculation in Indonesia

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT , TRI MURTI LUBIS

2024

Jurnal internasional bereputasi

## A Machine Learning Approach to pH Monitoring: Mango Leaf Colorimetry in Aquaculture

ROMI FADILLAH RAHMAT

2022

Jurnal internasional bereputasi

## Astrocytoma, ependymoma, and oligodendroglioma classification with deep convolutional neural network

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT

2025

Jurnal internasional bereputasi

## Leveraging Real-time GTFS and Integrated Data for High-Accuracy LRT Departure Delay Prediction using Optimized Machine Learning

ROSSI PASSARELLA , MASTURA DIANA MARIESKA , ROMI FADILLAH RAHMAT , AULYA PUTRI AYU , ISBATUDINIA , NURAINIYAH SOLEHAN , Harumi Veny

2021

Prosiding seminar internasional

## Classification of Mangrove Sprouts Based on Its Morphological Measurement

ROMI FADILLAH RAHMAT

2021

Prosiding seminar internasional

## Classification of Mangrove Sprouts Based on Its Morphological Measurement

SHARFINA FAZA , MERYATUL HUSNA , RINA ANUGRAHWATY , ANDI SUPRIADI CHAN , AJULIO PADLY SEMBIRING , ROMI FADILLAH RAHMAT

2022

Jurnal internasional bereputasi

## Information technology based smart farming model development in agriculture land

ROMI FADILLAH RAHMAT

2022

Jurnal internasional bereputasi

## Astrocytoma, ependymoma, and oligodendroglioma classification with deep convolutional neural network

ARIF RIDHO LUBIS , SHARFINA FAZA , ROMI FADILLAH RAHMAT , AL- KHOWARIZMI

2024

Prosiding seminar internasional

## Menu Classification using KNN and Naïve Bayes Algorithms at Kopi Krintji Cafe

ROMI FADILLAH RAHMAT , Rahmat Budiarto

2024

Jurnal internasional bereputasi

# Deep Learning Based Entropy Controlled Optimization for the Detection of Covid-19

ROMI FADILLAH RAHMAT , Mohammed Alonazi , Sara A. Althubiti , Abdullah Alshammari , Jiong Chen

2025

Jurnal internasional bereputasi

## Computationally Enhanced UAV-Based Real-Time Pothole Detection Using YOLOv7-C3ECA-DSA Algorithm

ROMI FADILLAH RAHMAT

2022

Jurnal internasional bereputasi

## LAKE TOBA WATER QUALITY PREDICTION USING EXTREME MACHINE LEARNING

ROMI FADILLAH RAHMAT , SARAH PURNAMAWATI

2023

Jurnal internasional bereputasi

## The Role of Faster R-CNN Algorithm in the Internet of Things to Detect Mask Wearing: The Endemic Preparations

ROMI FADILLAH RAHMAT , MUHARMAN LUBIS , AL- KHOWARIZMI , ARIF RIDHO LUBIS

2024

Jurnal internasional bereputasi

## Braille letter recognition in deep convolutional neural network with horizontal and vertical projection

SARAH PURNAMAWATI , ARIF RIDHO LUBIS , WILLY MARDIANTO , Riza Sulaiman , Farhad Nadi , ROMI FADILLAH RAHMAT , SHARFINA FAZA

2024

Prosiding seminar internasional

## Analysis of Spelling Errors in Text Data Using Graph Neural Networks (GNNs) Based on Machine Learning

ROMI FADILLAH RAHMAT

2025

Jurnal internasional bereputasi

## An evaluation of nature-inspired meta-heuristic algorithms for hyperparameter optimization in reinforcement learning

ROMI FADILLAH RAHMAT , ANDRE HASUDUNGAN LUBIS

2024

Jurnal internasional bereputasi

## Detection of ammonia in aquaculture wastewater using mango leaf extract-immobilized paper sensors and smartphone colorimetric analysis

ROMI FADILLAH RAHMAT , Farhad Nadi , Shahadat Hossain , Hajar Rastegari

2024

Jurnal internasional bereputasi

## DEEP LEARNING-DRIVEN CAR PARKING SPACE DETECTION: A YOLOR APPROACH

ROMI FADILLAH RAHMAT

2021

Jurnal internasional bereputasi

## Air Quality Classification Using Naive Bayes Classifier on Distributed Raspberry Pi Cluster System

ROMI FADILLAH RAHMAT , SARAH PURNAMAWATI

2020

Prosiding seminar internasional

## Facial Recognition-Based Automatic Door Access System Using Extreme Learning Machine

INDRA AULIA , ROMI FADILLAH RAHMAT

2024

## **Sentiment Analysis Using Large Language Models: A Case Study of GPT-3.5**

ROMI FADILLAH RAHMAT , Farhad Nadi

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2026

Jurnal nasional terakreditasi

### **Multi-Detection System Using Faster R-CNN for Fish Species Classification and Quality Assessment on Android**

SHARFINA FAZA , ARIF RIDHO LUBIS , MERYATUL HUSNA , RINA ANUGRAHWATY , ROMI FADILLAH RAHMAT , M. RAFIF RASYIDI

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2026

Jurnal internasional bereputasi

### **DyWIS: Dynamic Weighted Influence Score-Based Machine Learning for In-Game Win Loss Prediction in Elite Badminton Singles**

ROMI FADILLAH RAHMAT

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2020

Prosiding seminar internasional

### **Sparse Matrix Implementation on Personal News Recommendation for Anonymous User**

DETANIA SUKARJA , SARAH PURNAMAWATI , TRI MURTI LUBIS , ROMI FADILLAH RAHMAT

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2021

Jurnal internasional bereputasi

### **IDENTIFICATION OF THE FISH SURVIVAL RATE AND THE FISH TYPES TO LIVE IN LAKE TOBA USING MACHINE LEARNING**

INDRA AULIA , SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT

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2024

Jurnal internasional bereputasi

### **Human blood group type detection prototype focusing on agglutinin using microcontroller based photodiode**

AL- KHOWARIZMI , ROMI FADILLAH RAHMAT , MUHARMAN LUBIS , ARIF RIDHO LUBIS

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2023

Jurnal internasional bereputasi

### **Mangrove Fruit Ripeness Classification Using Deep Convolutional Neural Network**

RINA ANUGRAHWATY , SHARFINA FAZA , AJULIO PADLY SEMBIRING , MERYATUL HUSNA , ROMI FADILLAH RAHMAT

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2025

Jurnal internasional bereputasi

### **IDENTIFICATION OF PAPAYA VARIETIES IN COMPUTER VISION AND DEEP LEARNING APPROACHES**

AJULIO PADLY SEMBIRING , SHARFINA FAZA , MERYATUL HUSNA , ROMI FADILLAH RAHMAT

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2023

Jurnal internasional bereputasi

### **Internet of Things in aquaculture: A review of the challenges and potential solutions based on current and future trends**

ROMI FADILLAH RAHMAT

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2023

Jurnal internasional bereputasi

### **KIDNEY STONES IDENTIFICATION UTILIZING EXTREME LEARNING MACHINE**

SHARFINA FAZA , AJULIO PADLY SEMBIRING , MERYATUL HUSNA , ROMI FADILLAH RAHMAT

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## **Researches**

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2019

Penelitian Dana Lokal Perguruan Tinggi

### **PENGENALAN DAN DETEKSI PAPAN IKLAN JALAN RAYA BERBASIS**

## **ANDROID**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT , HANDRA SAITO

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2019

Penelitian Dana Lokal Perguruan Tinggi

### **KLASIFIKASI PADA CITRA MEDIS DIGITAL MELALUI PENDEKATAN ADVANCE MACHINE LEARNING**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT

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2025

### **KLASIFIKASI KASUS CYBERCRIME DENGAN TEXT CONVOLUTIONAL NEURAL NETWORK**

SARAH PURNAMAWATI , TRI MURTI LUBIS , ROMI FADILLAH RAHMAT

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2019

Penelitian Unggulan Perguruan Tinggi

### **PENGEMBANGAN DISTRIBUTED ADAPTIVE NEURAL NETWORK DAN KETERKAITAN DENGAN DEEP LEARNING**

SARAH PURNAMAWATI , OPIM SALIM SITOMPUL , ROMI FADILLAH RAHMAT , DENNIS

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2019

Penelitian Dana Lokal Perguruan Tinggi

### **IDENTIFIKASI KUALITAS AIR DANAU TOBA DENGAN PENDEKATAN DEEP LEARNING**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT

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2022

### **IDENTIFIKASI DAN KLASIFIKASI JENIS MANGROVE BESERTA ZONA TANAM MANGROVE DENGAN INTERNET OF THINGS DAN ADVANCE MACHINE LEARNING**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT , ONRIZAL

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2021

Penelitian Dana Lokal Perguruan Tinggi

### **KLAFIKASI TEXT MINING DARI BERITA KEJAHATAN CYBER DENGAN MACHINE LEARNING**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT , PENTARI TRIMITA PAKPAHAN , YUNITA S MARITO PANE

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2021

Penelitian Dana Lokal Perguruan Tinggi

### **DEEP LEARNING UNTUK KLASIFIKASI CITRA BRAILLE**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT , FENTA GRATA , WILLY MARDIANTO

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2020

Penelitian Unggulan Perguruan Tinggi

### **SISTEM KLASIFIKASI JENIS MANGROVE BERDASARKAN CITRA MORFOLOGI**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT

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2021

Penelitian Unggulan Perguruan Tinggi

### **SISTEM KLASIFIKASI JENIS MANGROVE BERDASARKAN CITRA MORFOLOGI**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT , RHAMA PERMADI AHMAD , SHIFANI ADRIANI CH.

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2017

Penelitian Dana Lokal Perguruan Tinggi

### **Pengenalan Gerakan Tangan Dinamis Menggunakan Deep Learning**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT , EKA PRATIWI GOENFI

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2020

Penelitian Dana Lokal Perguruan Tinggi

### **APLIKASI REKOMENDASI BERITA CYBER CRIME DENGAN METODE SPARSE MATRIX REPRESENTATION**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT

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2017  
Penelitian Dana Lokal Perguruan Tinggi

## **PENGENALAN GERAKAN TANGAN STATIS PADA INTERAKSI MANUSIA - KOMPUTER**

OPIM SALIM SITOMPUL , ROMI FADILLAH RAHMAT , TENGGU CHAIRUNNISA

2023

## **DEEP NEURAL NETWORK DI DALAM KLASIFIKASI KUALITAS AIR**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT

2019

Penelitian Unggulan Perguruan Tinggi

## **SISTEM CERDAS PEMANTAUAN LINGKUNGAN SECARA REAL TIME DENGAN PENGOPTIMALAN ADVANCE MACHINE LEARNING**

SARAH PURNAMAWATI , TIGOR HAMONANGAN NASUTION , ROMI FADILLAH RAHMAT , REZA TAQYUDDIN

2019

Penelitian Dana Lokal Perguruan Tinggi

## **PENDETEKSIAN RUANG PARKIR KOSONG DALAM SISTEM PARKIR MOBIL DENGAN KECERDASAN BUATAN**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT , JOKO KURNIANTO

2021

Penelitian Unggulan Perguruan Tinggi

## **KLASIFIKASI BIG DATA MONITORING CUACA DAN AIR MENGGUNAKAN ADAPTIVE NEURAL NETWORK**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT

2016

## **SEGMENTASI WARNA KULIT PADA CITRA MENGGUNAKAN TIGA RUANG WARNA**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT

2018

Penelitian Unggulan Perguruan Tinggi

## **SISTEM CERDAS PEMANTAUAN LINGKUNGAN SECARA REAL TIME DENGAN PENGOPTIMALAN ADVANCE MACHINE LEARNING**

SARAH PURNAMAWATI , TIGOR HAMONANGAN NASUTION , ROMI FADILLAH RAHMAT , REZA TAQYUDDIN

2020

Penelitian Unggulan Perguruan Tinggi

## **KLASIFIKASI BIG DATA MONITORING CUACA DAN AIR MENGGUNAKAN ADAPTIVE NEURAL NETWORK**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT

2020

Penelitian Dana Lokal Perguruan Tinggi

## **PENERAPAN DAN AUTOMASI SISTEM PENDETEKSIAN TUMOR OTAK PADA CITRA MRI DENGAN PENDEKATAN KECERDASAN BUATAN**

SARAH PURNAMAWATI , ROMI FADILLAH RAHMAT , HALIMATUSSADIAH , MHD. FARIS PRATAMA

2018

Penelitian Unggulan Perguruan Tinggi

## **PENGEMBANGAN DISTRIBUTED ADAPTIVE NEURAL NETWORK DAN KETERKAITAN DENGAN DEEP LEARNING**

SARAH PURNAMAWATI , OPIM SALIM SITOMPUL , ROMI FADILLAH RAHMAT , DENNIS

## **Community Services**

2019

Ipteks Bagi Masyarakat

## **Pelatihan dan Pendidikan Hukum Transaksi Jual Beli Online untuk Remaja**

YETI MELIANY LUBIS , TRI MURTI LUBIS , ROMI FADILLAH RAHMAT , DETANIA SUKARJA

2022

## **Saksi Ahli ITE dengan Kepolisian Negara Republik Indonesia Daerah Sumatera Utara Resor Labuhan Batu**

ROMI FADILLAH RAHMAT

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## **Intellectual Property Rights**

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2023

Hak cipta nasional

## **MODUL PENGGUNA APLIKASI IDENTIFIKASI IKAN AIR TAWAR DI DANAU TOBA DENGAN SVM**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

## **Research Phase Part I**

ROMI FADILLAH RAHMAT

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2023

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## **Defining Problem Statement & Basic Research**

ROMI FADILLAH RAHMAT

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2023

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## **Sampling And Intro To Research**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

## **Intro To Literature And Implementation Of Literature Review**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

## **Profession Ethic And Online Plagiarism System**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

## **Research Phase Part II**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

## **Step By Step For Literature Survey And Resource For Literature Review**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

## **Principles Of Experimental Design**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

## **MODUL PENGGUNA USER MANUAL APLIKASI KANKER MELANOMA DENGAN METODE CNN**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

## **MODUL PENGGUNA KLASIFIKASI LAHAN SAWAH DENGAN METODE KNN (K-NEAREST NEIGHBOUR)**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

**MODUL KLASIFIKASI CITRA PARU-PARU BRONKITIS DAN TBC DENGAN  
EXTREME LEARNING MACHINE**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

**Experimental Design**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

**MODUL PENGGUNAAN APLIKASI IDENTIFIKASI PENYAKIT OSTEOPOROSIS  
DENGAN METODE ELM**

ROMI FADILLAH RAHMAT

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2023

Hak cipta nasional

**Research Design**

ROMI FADILLAH RAHMAT

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