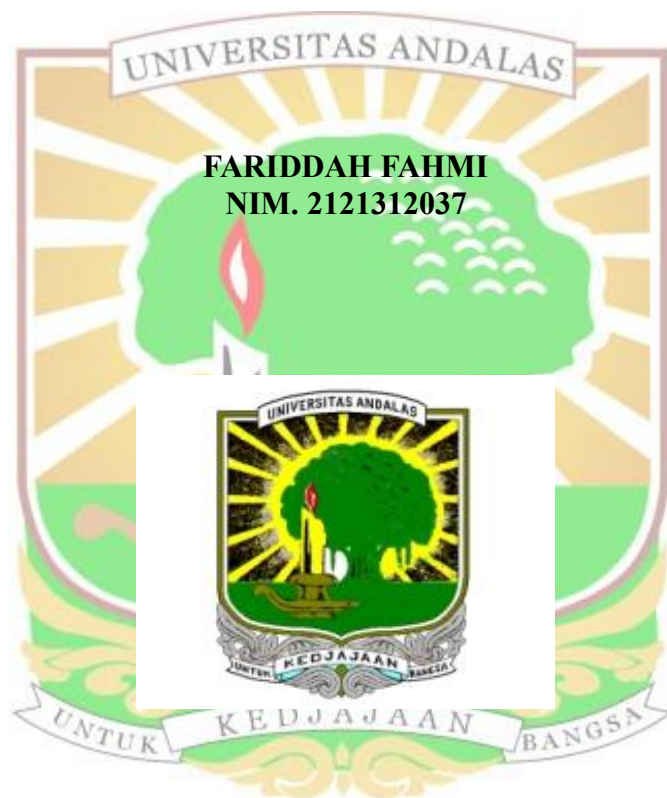


**ANALISIS TEKANAN DARAH MELALUI GAMBAR REKAMAN EKG
MENGUNAKAN METODE *ARTIFICIAL INTELLIGENT* DENGAN
ARSITEKTUR *DEEP LEARNING* PADA PASIEN *POST PCI*
DI INSTALASI PELAYANAN JANTUNG TERPADU
RSUP DR. M DJAMIL PADANG**

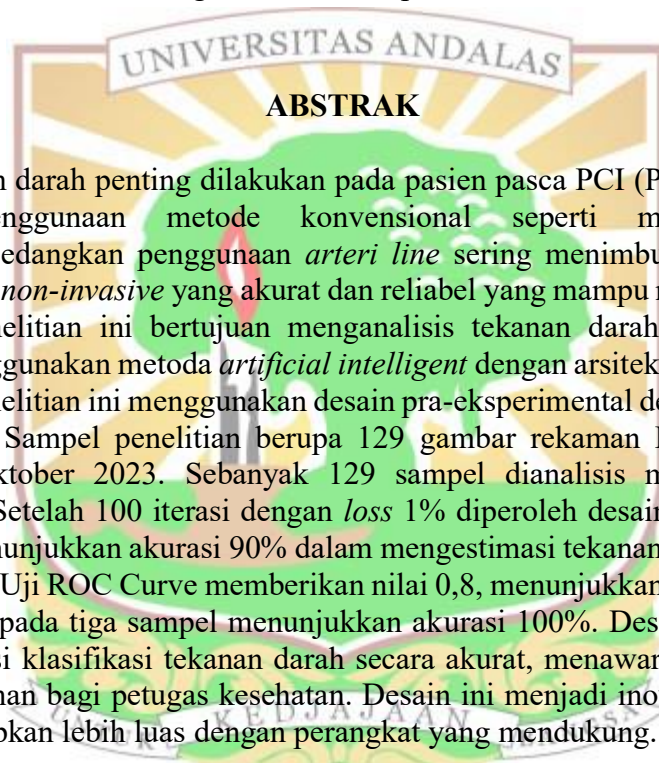
TESIS



**FAKULTAS KEPERAWATAN
UNIVERSITAS ANDALAS
2025**

**Analisis Tekanan Darah Melalui Gambar Rekaman EKG Menggunakan Metoda
Artificial Intelligent Dengan Arsitektur *Deep Learning*
Pada Pasien *Post PCI* di Instalasi Pelayanan Jantung Terpadu
RSUP Dr. M Jamil Padang**

xvii + 137 halaman+ 13 tabel + 26 gambar +11 lampiran



Pemantauan tekanan darah penting dilakukan pada pasien pasca PCI (Percutaneous Coronary Interventions). Penggunaan metode konvensional seperti manset menimbulkan ketidaknyamanan, sedangkan penggunaan *arteri line* sering menimbulkan berbagai resiko. Dibutuhkan metode *non-invasive* yang akurat dan reliabel yang mampu memberikan informasi tekanan darah. Penelitian ini bertujuan menganalisis tekanan darah berdasarkan gambar rekaman EKG menggunakan metoda *artificial intelligent* dengan arsitektur *deep learning* pada pasien post PCI. Penelitian ini menggunakan desain pra-eksperimental dengan rancangan *static group comparison*. Sampel penelitian berupa 129 gambar rekaman EKG pasien post-PCI periode Agustus-Oktober 2023. Sebanyak 129 sampel dianalisis menggunakan residual network (ResNet). Setelah 100 iterasi dengan *loss* 1% diperoleh desain model (*netTransfer*). Validitas model menunjukkan akurasi 90% dalam mengestimasi tekanan darah pada kelompok hipertensi derajat 1. Uji ROC Curve memberikan nilai 0,8, menunjukkan performa model yang baik. Implementasi pada tiga sampel menunjukkan akurasi 100%. Desain model *netTransfer* efektif mengestimasi klasifikasi tekanan darah secara akurat, menawarkan kenyamanan bagi pasien dan kemudahan bagi petugas kesehatan. Desain ini menjadi inovasi baru yang efisien dan potensial diterapkan lebih luas dengan perangkat yang mendukung.

Kata kunci: PCI, tekanan darah, EKG, Residual Network, *netTransfer*.

Daftar Pustaka: 35 (2018-2024)

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***Blood Pressure Analysis Using ECG Recording with Artificial
Intelligent Method and Deep Learning Architecture in Post-PCI
Patient at the Integrated Cardiac Service Unit,
M. Jamil Padang Hospital***

xvii + 137 page + 13 table + 26 scheme + 13 attachment

ABSTRACT

Blood pressure monitoring is crucial for patient post-percutaneous coronary intervention (PCI). Conventional methods, such as cuff-based devices, often cause discomfort, while invasive arterial lines carry various risks. This study aims to analysis blood pressure using artificial intelligence (AI) with a deep learning architecture based on electrocardiogram (ECG) recordings in post-PCI patient. This pre-experimental study utilized a static group comparison design. A total of 132 ECG images from post-PCI patients between August and October 2023 were collected, and 129 images were analysis using a residual network (ResNet). After 100 iterations with a loss of 1%, a model called netTransfer was developed. The model demonstrated 90% accuracy in estimating blood pressure for patients with grade 1 hypertension. The ROC curve analysis yielded an AUC value of 0.8, indicating good model performance. Implementation on three new samples achieved 100% accuracy. The netTransfer model effectively and accurately estimates blood pressure non-invasively, offering comfort for patients and convenience for healthcare providers. This innovative approach has the potential for broader application with appropriate device integration.

Keywords: PCI, blood pressure, ECG, residual network, netTransfer

Reference: 35 (2018-2024)