

Landmine Detection With Ground Penetrating Radar Using

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Landmine detection using impulse ground penetrating radar

Detection using hand-held prodding is a slow and expensive process. Impulse Ground Penetrating Radar (ImGPR) is a nondestructive technique capable of detecting shallowly buried nonmetallic anti-personnel (AP) and anti-tank (AT) landmines. In this PhD thesis, ImGPR is considered as a tool to detect landmines and UXO.

GPR-Based Landmine Detection and Identification Using ...

Ground-penetrating radar (GPR) is a sensor which has a good potential for use in buried land mine detection. Compared to metal detectors (EMI sensors), GPR can detect both metallic and non-metallic objects, and has the capability of imaging the target shape. However, application of GPR to mine detection has suffered from many technical problems.

Signal Processing Techniques for Landmine Detection Using ...

29 April 2008 Landmine detection with ground penetrating radar using discrete hidden Markov models with symbol dependent features. Hichem Frigui, Oualid Missaoui, Paul Gader. Author Affiliations + Proceedings Volume 6953, Detection and Sensing of Mines, Explosive Objects, and Obscured ...

A Lightweight and Low-Power UAV-Borne Ground Penetrating ...

Landmine detection using impulse ground penetrating radar PRADEEP Cheekatla. RADAR BULLET Amith Nandivada. New landmines detection using ground penetrating radar sourabh kant. Radar ppt pratibha007. GROUND PENETRATING RADAR(GPR) ppt Himanshu Yadav. ground penetrating radar Gauravate. Presentation ict ...

Landmines Detection - SlideShare

Histograms of Oriented Gradients for Landmine Detection in Ground-Penetrating Radar Data Abstract: Ground-penetrating radar (GPR) is a powerful and rapidly maturing technology for subsurface threat identification.

Fuzzy logic detection of landmines with ground penetrating ...

landmine with a metal detector, technology development has been funded in other areas. Ground penetrating radar (GPR) has been used for nearly 70 years for a variety of geophysical subsurface imaging applications including utility mapping and hazardous waste container location and has been actively applied to the problem of landmine detection for

Landmine detection with ground penetrating radar using ...

1. Introduction. Detection and removal of landmines is a serious problem affecting civilians and soldiers worldwide. It is estimated that there are up to 100 million active buried million landmines in the world and that every 20 min someone is either killed or maimed by a landmine .Ground penetrating radar (GPR) sensors are currently under investigation for landmine detection.

Landmine detection with ground penetrating radar using ...

The process can be safely sped up by use of Ground-Penetrating Radar (GPR) to image the subsurface, to verify metal detection results and safely ignore any objects which could not possibly be a landmine. In this thesis, we explore the possibility of using Full Wave Inversion (FWI) to improve GPR imaging for landmine detection.

Ground-Penetrating Radar for Close-in Mine Detection ...

Over the last few years researchers at Universidad Javeriana Bogotá, a University in Colombia, have been looking into using SDRs for aerial landmine detection. The research uses a USRP B210 software defined radio mounted on a quadcopter, together with two Vivaldi antennas (one for TX and one for RX). The system is then used as a ground penetrating radar (GPR).

Landmine Detection With Ground Penetrating

Abstract: Novel, general methods for detecting landmine signatures in ground penetrating radar (GPR) using hidden Markov models (HMMs) are proposed and evaluated. The methods are evaluated on real data collected by a GPR mounted on a moving vehicle at three different geographical locations. A large library of digital GPR signatures of both landmines and clutter/background was constructed and ...

Better Imaging for Landmine Detection: An exploration of ...

In this chapter, two of the major challenges in the application of ground-penetrating radar in humanitarian demining operations are addressed: (i) development and testing of affordable and practical ground penetrating radar (GPR)-based systems, which can be used off-ground and (ii) development of robust signal processing techniques for landmines detection and identification.

Landmine detection with ground penetrating radar using ...

DOI: 10.1109/36.927446 Corpus ID: 10582099. Landmine detection with ground penetrating radar using hidden Markov models @article{Gader2001LandmineDW, title={Landmine detection with ground penetrating radar using hidden Markov models}, author={Paul D. Gader and Mirosław Mystkowski and Yunxin Zhao}, journal={IEEE Trans. Geosci.

LANDMINE DETECTION USING IMPULSE GROUND PENETRATING RADAR

New landmines detection using ground penetrating radar 1. MADE BY:- SOURABH KANT 2. Quick Intro to Radar Electromagnetic radiation Usually in the microwave frequencies 500 MHz into the 10s of GHz Operates with pulse-echo mechanism Similar to ultrasound Usually very narrow band Except for Ground Penetrating Radar (GPR)

Multi-Feature Based Multiple Landmine Detection Using ...

On drone ground penetrating radar for landmine detection. In Proceedings of the 2017 First International Conference on Landmine: Detection, Clearance and Legislations (LDCL), Beirut, Lebanon, 26–28 April 2017.

New landmines detection using ground penetrating radar

ground penetrating radars (GPRs) have attracted many researchers attention. GPRs have been used for various applications such as [26,27] and [28], to name a few. In particular, they are frequently selected for landmine detec-tion [2,29{33]. In addition, an attempt to use a metal detector and a GPR together in the landmine detection has been ...

Histograms of Oriented Gradients for Landmine Detection in ...

Ground penetrating radar (GPR) has been used for nearly 70 years for a variety of geophysical subsurface imaging applications including utility mapping and hazardous waste container location and has been actively applied to the problem of landmine detection for nearly 20 years.

MULTI-FEATURE BASED DETECTION OF LANDMINES USING GROUND ...

Key words: Landmine detection, ground penetrating radar, neural networks, principal component analysis, clutter removal 1. INTRODUCTION Landmines and other explosive remnants of war pose a debilitating threat to innocent civilians long after hostilities have ceased. World-wide, 4191 people (of which 75 % were civilians) were killed or injured during

Aerial Landmine Detection using USRP SDR Based Ground ...

Among those sensors, ground penetrating radars, or GPRs, are an attractive choice for landmine detection due to their advantages over other sensors. The GPR can be used as a stand-alone sensor or as a complementary sensor to a metal detector [1 , 2].

LANDMINE DETECTION BY MEANS OF GROUND PENETRATING RADAR: A ...

Ground Penetrating Radar, landmine detection, Support Vector Machine, PCA, geometric feature, multiple landmine. 1. Introduction Safe landmine removal is an urgent but difficult job faced by many countries. The removal process requires detection of a landmine buried in the ground. Once it is detected, the landmine can be eliminated in various ways.